FOCUS enhancements

FS-2 STUDIO DTE DISK RECORDER

RELEASE 1.0

USER GUIDE

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October 1, 2004

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Email:	support@FOCUSinfo. com
Telephone:	408-370-9963 8AM - Noon
	and 1PM - 5PM (PST), Monday to Friday (Hint: Mondays tend to be the busiest)
Fax:	408-866-4859
Address:	FOCUS ENHANCEMENTS, Inc.
	1370 Dell Ave.
	Campbell, CA. 95008

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

IMPORTANT NOTICE

The serial number for this equipment is located on the bottom of the unit. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

CAUTION:

This product satisfies FCC regulations when shielded cables and connectors are used to connect the unit to other equipment. To prevent electromagnetic interference with electric appliances such as radios and televisions, use shielded cables and connectors for connections.

NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be

determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Information to User

Alteration or modifications carried out without appropriate authorization may invalidate the user's right to operate the equipment.

CAUTION:

- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- The use of optical instruments with this product will increase eye hazard.

THE ON/OFF SWITCH IS SECONDARY CONNECTED AND THEREFORE DOES NOT SEPARATE THE UNIT FROM MAINS POWER IN STANDBY POSITION.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE A (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.

IMPORTANT

C**AUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

The lightning flash with arrowhead symbol, with an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.

Important Safety Instructions:

READ INSTRUCTIONS - All the safety and operating instructions should be read before the product is operated.

RETAIN INSTRUCTIONS - The safety and operating instructions should be retained for future reference.

HEED WARNINGS - All warnings on the product and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS - All operating and use instructions should be followed.

CLEANING - Unplug this product from the wall outlet before cleaning. The product should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

ATTACHMENTS - Do not use attachments not recommended by the product manufacturer as they may cause hazards.

WATER AND MOISTURE - Do not use this product near water - for example, near a bathtub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.

ACCESSORIES - Do not place this product on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious injury to a child or an adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

CART - A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

VENTILATION - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

POWER SOURCES - This product should be operated only form the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your dealer or local power company.

LOCATION - The appliance should be installed in a stable location.

NON-USE PERIODS - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

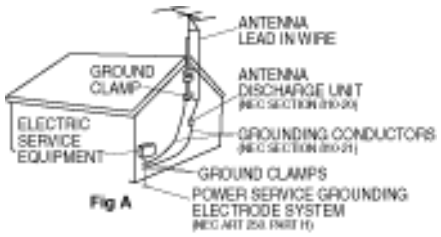
GROUNDING OR POLARIZATION -

- If this product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other), it will fit into the outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- If this product is equipped with a three-wire grounding type plug, a plug having a third (grounding) pin, it will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.

POWER-CORD PROTECTION - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit the product.

OUTDOOR ANTENNA GROUNDING - If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electric Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an

antenna discharge unit, size of grounding connectors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.



LIGHTNING - For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

POWER LINES - An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

OVERLOADING - Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

OBJECT AND LIQUID ENTRY - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

SERVICING - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

DAMAGE REQUIRING SERVICE - Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance - this indicates a need for service.

REPLACEMENT PARTS - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

SAFETY CHECK - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

WALL OR CEILING MOUNT - The product should not be mounted to a wall or ceiling.

HEAT - The product should be situated away from heat sources such as radiators, heat, registers, stoves or other products (including amplifiers) that produce heat.

For customers within the USA and Canada, FOCUS ENHANCEMENTS, Inc. warrants this product against defects in materials or workmanship as follows:

For a period of TWO years from the date of purchase, FOCUS ENHANCEMENTS, Inc. will repair or replace the unit, at our option, without charge for parts or labor. After the period of TWO years, you must pay all parts and labor charges.

The limited warranty is extended only to the original purchaser. It does not cover damage or failure caused by or attributable to Acts of God, abuse, misuse, improper or abnormal usage, faulty installation, improper maintenance, lightning, or other incidences of excessive voltage, or any repairs or tampering by other than the FOCUS ENHANCEMENTS repair facility. It does not cover replacement of batteries or other consumable parts, transportation costs or damage in transit. This warranty will become void if the serial number or model number identification has been wholly or partially removed or erased. Repair or replacement under the terms of this warranty do not extend the terms of this warranty. Repairs or replacement performed outside of the warranty period will carry a warranty for 60 days from return shipment. This warranty can not be modified by an agent of FOCUS ENHANCEMENTS, Inc. unless in written and signed by an officer of FOCUS ENHANCEMENTS, Inc.

Should this product prove defective in workmanship or material, the consumer's sole remedies shall be such repair or replacement provided by the terms of this warranty. Under no circumstances shall FOCUS ENHANCEMENTS, Inc. be liable for any loss or damage, direct, consequential, or incidental, arising out of the use of or inability to use this product. Some states do not allow limitations on how long an implied warranty lasts or the exclusions or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

Before requesting warranty or repair service, refer to http://www.focusinfo.com/support/, to review the Trouble Shooting guidelines and the FAQs.

In the United States or Canada, to obtain warranty service, call or write the FOCUS ENHANCEMENTS, Inc. Technical Support Line for a Return Material Authorization (RMA) number. Technical Support can be reached at:

Email:support@FOCUSinfo. com

Telephone:408-370-9963 8AM - Noon

and 1PM - 5PM (PST), Monday to Friday (Hint: Mondays tend to be the busiest)

Fax: 408-866-4859

Address: FOCUS ENHANCEMENTS, Inc.

1370 Dell Ave.

Campbell, CA. 95008

Please mark the RMA number clearly on the outside of the package. Include a copy of your sales receipt, a brief description of the symptoms, your name, address within the USA or Canada, phone number and any special shipping instructions. Then deliver or ship the product, postage and shipping costs prepaid, to the address above.

For customers outside the USA or Canada, A warranty can only be offered through your dealer or distributor and not through FOCUS ENHANCEMENTS directly, for this product.

Please contact your dealer or distributor for repairs or technical support. Refer to http://www.focusinfo.com/order-desk under, “FOCUS Resellers Worldwide”, for a list of International Dealers and Authorized Service Centers.

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CHAPTER 1 INTRODUCTION

Thank you for purchasing the Focus Enhancements FireStore FS-2 DTE DV Studio Disk Recorder.

The FS-2 is designed for use as a record or playback device in studios, mobile vans and other installations.

The purpose of this User Guide is to explain the features and operation of the FireStore FS-2. Study the contents of this User Guide before attempting to use your FS-2.

Check the Focus Enhancements website regularly for updates to FS-2 software and documentation:

www.focusinfo.com/support

Alternatively, contact your Focus Enhancements FireStore dealer/distributor.

This chapter contains the following sections:

- What is a DTE Disk Recorder?
- What is the FireStore FS-2?
- Basic Applications
- Receiving, Unpacking, and Inspecting
- Package Contents
- Installation and Site Requirements
- Mounting in a 19” Electronics Rack
- Inserting the Internal 3.5” IDE Drive
- Using External Disk Drives
- Physical Features
- Setting Up the FS-2
- Formatting the Drive
- Setting the Time and Date

What is a DTE Disk Recorder?

A DTE Disk Recorder is a device that allows you to record or play back DV video directly to/from a removable IDE disk drive or removable FireWire disk drives. The FS-2 features analog and digital inputs and outputs including DV25, SDI, composite, component, S-Video, AES/EBU digital audio and balanced analog audio.

Audio and video are recorded to disk as a DV25 data stream in NLE native file formats.

What is the FireStore FS-2?

The FireStore FS-2 is a DTE Disk Recorder that mounts horizontally in a standard electronics rack. With the FireStore FS-2, it is possible to:

- Input DV25, SDI, composite, component, S-Video, AES/EBU digital audio and balanced analog audio and record to disk in native DV25 NLE file formats.
- Playback video from disk or transcode during recordings in DV25, SDI, composite, component, S-Video, AES/EBU digital audio and balanced analog audio formats.
- Capture clips to hard disk at the acquisition stage. There is no need to capture them later.
- Record clips to disk in DTE Technology-based “edit-ready” file formats such as Raw DV, AVI Type 1, AVI Type 2, Matrox AVI, Canopus AVI, Pinnacle AVI, QuickTime and Avid DV-OMF. This means clips are immediately available to your NLE system without first having to transfer or convert the files.
- Connect your FireWire disk directly to your computer or connect via FireStore which allows mounting and dismounting of the drives without re-cabling or computer re-boots.
- Use the FS-2's 10/100BaseT Ethernet port to share files over a network via FTP.
- Jump from clip to clip without spooling through tape when in playback mode.
- As well as video, record and play back embedded DV audio in either 2-channel (16-bit, 48kHz) or 4-channel (12-bit, 32kHz) formats.

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- Record external timecode, embedded timecode or create your own Free Run, Regen or Rec Run timecode. You can also preset timecode and user-bit values.
- Record, play and navigate using FireStore FS-2's VTR style controls.
- Lock to your facilities Reference Video signal during playback and record.
- Record and recall a single frame of DV video and record user definable time-lapse sequences.
- Use trick playback modes up to 30X/-30X fast-forward and rewind speeds, reverse play, loop clip and loop entire disk.
- Control the FS-2 remotely via industry standard RS422 (Sony 9-pin), FireWire (for starting record/pause or AV/C) from a DV based camcorder GPI port. Alternatively, or control the FS-2 via RS-232C (using the optional wired remote control available as an accessory).
- Create and save multiple playlists on the FS-2. These can be shared between different units.
- Utilize the internal 120GB, 7200RPM, 3.5" IDE drive or daisy chain up to eight FireWire (IEEE-1394) hard drives (in addition to the internal removable FSHDD-1 FireWire hard drive) together for extremely long, uninterrupted record times.

Basic Applications

You can use the FS-2 in the acquisition stage of production, the editing/post production stage, and the presentation stage. The FS-2 is most useful in the following applications:

- Presentation Video Source
- Broadcast Tape Deck Replacement
- Time Lapse Recorder
- Film-to-Disk Transfer
- NLE/Linear Edit Source/Recorder
- Endless Video Program Looping
- Security Recorder/Player
- Medical Recorder/Player
- Web based Video Storage
- Industrial Monitoring
- Video DJ and Karaoke Player
- Outside Broadcast

Receiving, Unpacking, and Inspecting

Upon receipt of the FS-2 unit, examine the shipping container. If there is evidence of damage or rough handling, have an agent of the carrier present when the equipment is unpacked.

Unpack the equipment carefully. Inspect it for scratches, dents, or cracks. If the equipment is damaged, save all packing materials and notify both Focus Enhancements and the carrier immediately.

Package Contents

Please take a moment to study the contents of your FS-2 package. You should have the following contents:

- One (1) FireStore FS-2 unit with attached rack mounting ears
- One (1) 120GB IDE disk drive in caddy
- One (1) 6-pin to 6-pin FireWire cable (for External Drive connection)
- One (1) 6-pin to 6-pin FireWire cable (for front panel port loop)
- One (1) User Guide
- One (1) Focus Enhancement's Warranty Card and Statement
- One (1) Focus Enhancement's FireStore DV Conversion Suite Demo Disk

If any of these contents are missing, contact Focus Enhancements or your FireStore dealer/distributor immediately.

You may need to purchase cables to connect more than one hard disk drive to the FS-2 at a time. Your Focus Enhancements dealer can help you identify additional cables you may need.

Installation and Site Requirements

Focus Enhancements recommends that FS-2 units be installed in a restricted access area, such as an equipment room or closet and the installation be performed by trained installers.

The units are designed and tested to operate reliably between +5 - +40C (41 - 104 F).

To maintain this range, consider the following:

- Air temperature surrounding the equipment must remain within the specified range.
- Air flow around the equipment must be sufficient to maintain proper operating temperatures

If in doubt about the site temperature, take measurements to be certain. If measured temperatures fall outside the defined ambient temperature range, you must bring the temperature within the defined range.

Storage temperature for the units must remain between -20 - +60C (-4 - 140 F).

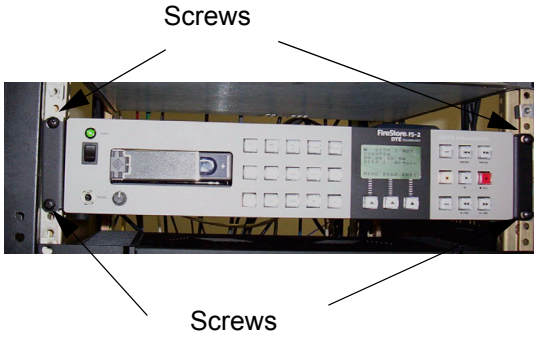
Mounting in a 19” Electronics Rack

The FS-2 measures 15.89” high x 17.36” wide by 3.47” deep. It is an 2RU chassis featuring front rack mount ears to be mounted into a standard 19” audio/visual rack. There must be room behind the unit for the attachment of cables.

To mount the FS-2 in a standard 19” audio/visual rack, do the following:

STEP 1: Determine the desired location. The FS-2 requires 3.47 vertical inches of rack space. To prevent overheating, the FS-2 requires a minimum of 1.75 vertical inches of space above and below the unit.

STEP 2: The FS-2 includes a pair of universal mounting ears on the front sides of the unit that support standard 19” audio/visual racks. Using the provided hardware mount the FS-2 securely in the rack.



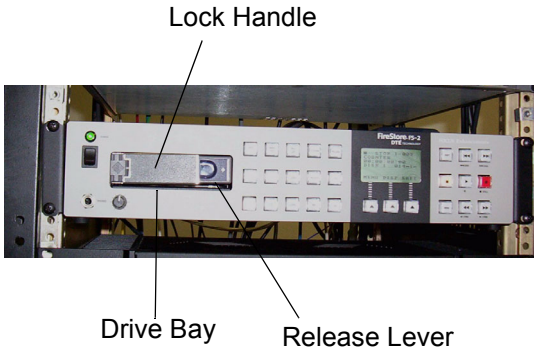
STEP 3: Connect the FS-2 unit to the wall current using the attached power cord.

Inserting the Internal 3.5” IDE Drive

Insert the internal 3.5” IDE drive as follows:

STEP 1: Remove the drive from its packaging.

STEP 2: Slide the drive carefully into the bay until it is seated firmly.



STEP 3: Press the Lock Handle flush with the chassis face to lock the drive in place.

To remove the drive, slide the Release Lever to the right. The Lock Handle disengages. Pull the drive toward you to remove it.

NOTE: This drive is not intended for hot-swap operation.

Using External Disk Drives

In addition to using a 3.5” IDE drive in the internal slot, you can also connect any FireWire disk drive to the HDD I/O port on the FS-2. Power a single FireWire disk drive on the FS-2 at any given time. If you are using more than one external FireWire drive, you must provide external power to these drives. It may also be necessary to partition and format the drives before their use with the FS-2. Refer to “Formatting the Drive” on Page 1-9 for instructions on preparing drives before use.

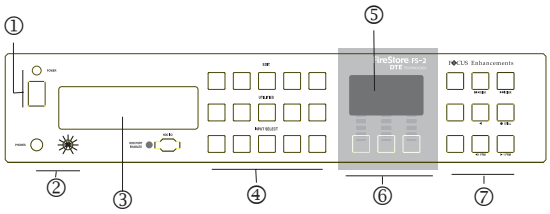
NOTE: You can “hot swap” connected external FireWire HDDs on the FS-2. This means you can disconnect and connect drives from the system without the need to power cycle the unit. However, make sure the FS-2 is in STOP mode before removing a disk drive.

Physical Features

The FS-2 features two main surfaces, the front control panel and the rear connector panel.

Front Panel

The front panel contains the seven control areas, as shown in the illustration below and described in this section:



① Power Rocker Switch and Power LED

This is the FS-2's main power switch. This switch, although mechanical, is controlled via software. When the power switch is set to ON and then OFF, in most cases the unit will take a moment to power down. During this time, the FS-2 is ensuring that any files that have not been closed properly in a record session get closed. This prevents errors occurring on particular files. The green LED above the power switch will be ON when the unit is powered up.

② 3.5mm Headphone Jack and Volume Knob

This jack is for connecting a pair of monitor headphones. You can monitor audio of the selected input (even if E-E is not selected) when not in record. When in record or playback, you can monitor the current audio. The headphone jack also includes a volume control.

③ Disk Drive Bay

The disk drive bay accepts a standard 3 1/2” removable disk drive in the supplied sled. Minimum system requirements for this drive are 7200RPM with a 2MB cache. Drive performance may vary. Focus Enhancements recommends that a FireStore qualified and tested disk drive be used. Check the Focus Enhancements website for an updated list. This bay is not intended for hot swap operation.

④ Edit / Utility / Input Buttons

This set of buttons contains edit, utility and input select functions for the FS-2. In some cases, these buttons work in conjunction with the FS-2 menus on the display.

Input selections are either Composite, Y/C (S-Video), Component, SDI and DV. You must select the audio source for each input in the SETUP -> AUDIO INPUT menu, the Timecode mode in the SETUP -> TC MODE menu, and the reference video source in the SETUP-> REF VIDEO menu. Refer to Chapter 2 for more details.

⑤ LCD Display

The FS-2 LCD displays the FS-2’s current status including track number, disk number, timecode, record / playback mode as well as other information. It also displays the FS-2 menu system. The LCD is a green backlit 128x64 graphical display.

⑥ Display Soft Keys

This set of soft buttons enables you to navigate the FS-2 menus. The function of the keys vary depending on what is displayed at the base of the FS-2 LCD. Refer to Chapter 2 for more information.

⑦ Transport Control Keys

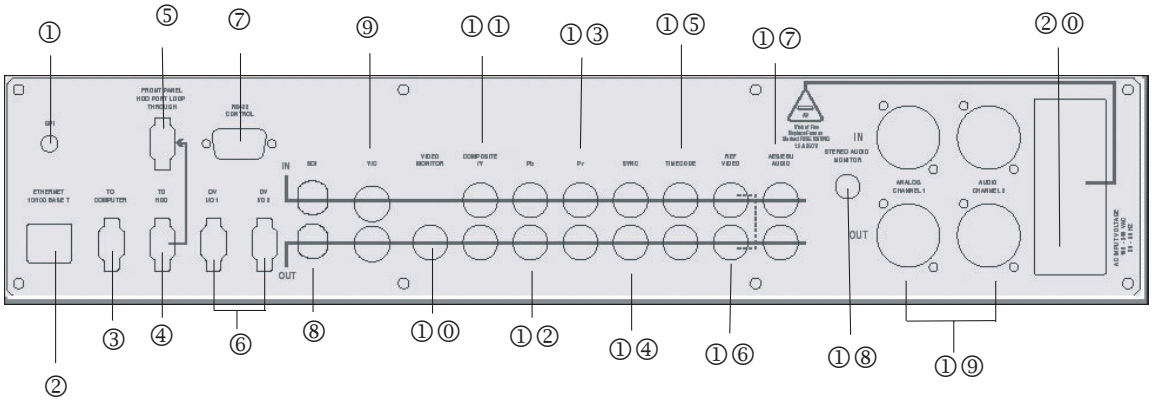
This set of buttons controls playback and record functions of the FS-2. These functions include play, reverse play, fast forward, fast rewind, forward frame, back frame, next track, previous track, stop, record, and so on.

Rear Panel

The FS-2 rear panel shown below contains control /audio/video input/output areas described in this section.

You can select any of the available inputs as a source. When selected, that source is what is recorded to disk. If the unit is in E-E mode or recording, all outputs are live with the incoming signal.

For any particular video input, there is an associated audio input selected as a default. You can change that default to another input utilizing the AUDIO INPUT MENU under SETUP. Refer to Chapter 2 for more information.



① *GPI :* For connection of the optional wired remote control (ACSS-0019-01), the optional RS232C cable (CBLA-0114-01) or contact closure cable. GPI accepts a 3.5mm TRS ccnnector.

② Ethernet 10/100 BaseT - For connecting FS-2 to a network or computers for file exchange.

③ *To Computer:* For connecting FS-2 to a computer's FireWire 400 port. Allows any disk drives connected to FS-2 to mount to the computer.

④ *To HDD :* For connecting external FireWire 400 disk drives to the FS-2. Use FS-2's HDD Bypass function with this port. When connection is made with "Front Panel HDD Port Loop Through", it allows the front panel FireWire connector to be used for connection of external FireWire HDDs.

⑤ *Front Panel HDD Port Loop Through:* When patched to the "To HDD" port, this connector activates the front panel FireWire port for connection of external HDDs.

⑥ *DV I/O 1 and DV I/O 2:* For connection of DV video devices.

⑦ *RS422 Control:* This is the input connector for external RS422 control devices.

⑧ *SDI Input :* For connecting SDI input sources.

SDI Output: For output to SDI devices.

⑨ *Y/C Input:* For connecting Y/C (S-Video) input sources.

Y/C Output: For connecting to Y/C (S-Video) devices.

①⓪ *Video Monitor Output:* For connection to a video monitor (composite). You can view the On Screen Display from this connection.

①① *Composite / Y input:* For connecting composite input sources or the Y signal for component input sources.

Composite / Y Output: For output to composite devices or the Y signal to component devices (select either composite or component form ANALOG SETTINGS in the SETUP MENU).

①② *Pb Input :* For connecting the Pb signal from component input sources.

Pb Output: For output of the Pb signal to component devices.

①③ *Pr Input:* For connecting the Pr signal from component input sources.

Pr Output: For output of the Pr signal to component devices

①④ *Sync Input:* For connecting the Sync signal on non sync on green component sources.

Sync Output: For connecting the Sync signal to non sync on green component devices.

①⑤ *Timecode Input:* For connecting external analog VITC timecode sources.

Timecode Output: For connection to external analog VITC timecode devices.

①⑥ *Reference Video:* For reference video loop through.
To use this Reference Video input, select REF VIDEO from from REF VIDEO in the SETUP menu.

①⑦ *AES/EBU Digital Audio Input and Output:* For connecting AES/EBU input sources or output to AES/EBU devices.

①⑧ *Stereo Audio Monitor Output:* For connection of audio monitors.

①⑨ *Balanced Analog Audio Input Channels 1 and 2:* For connecting balanced analog audio input sources.

Balanced Analog Audio Output Channels 1 and 2: For output to balanced analog audio devices.

②⓪ *AC In:* Use the power cord supplied to connect to the power outlet.

Setting Up the FS-2

This section explains how to set up the FS-2 for use. Refer to the illustration on the following page to perform these procedures:

Connect the following:

STEP 1: Plug in the power cord.

STEP 2: Connect a Video input device.

STEP 3: Connect an Audio source (if desired).

STEP 4: Connect a Monitor if desired.

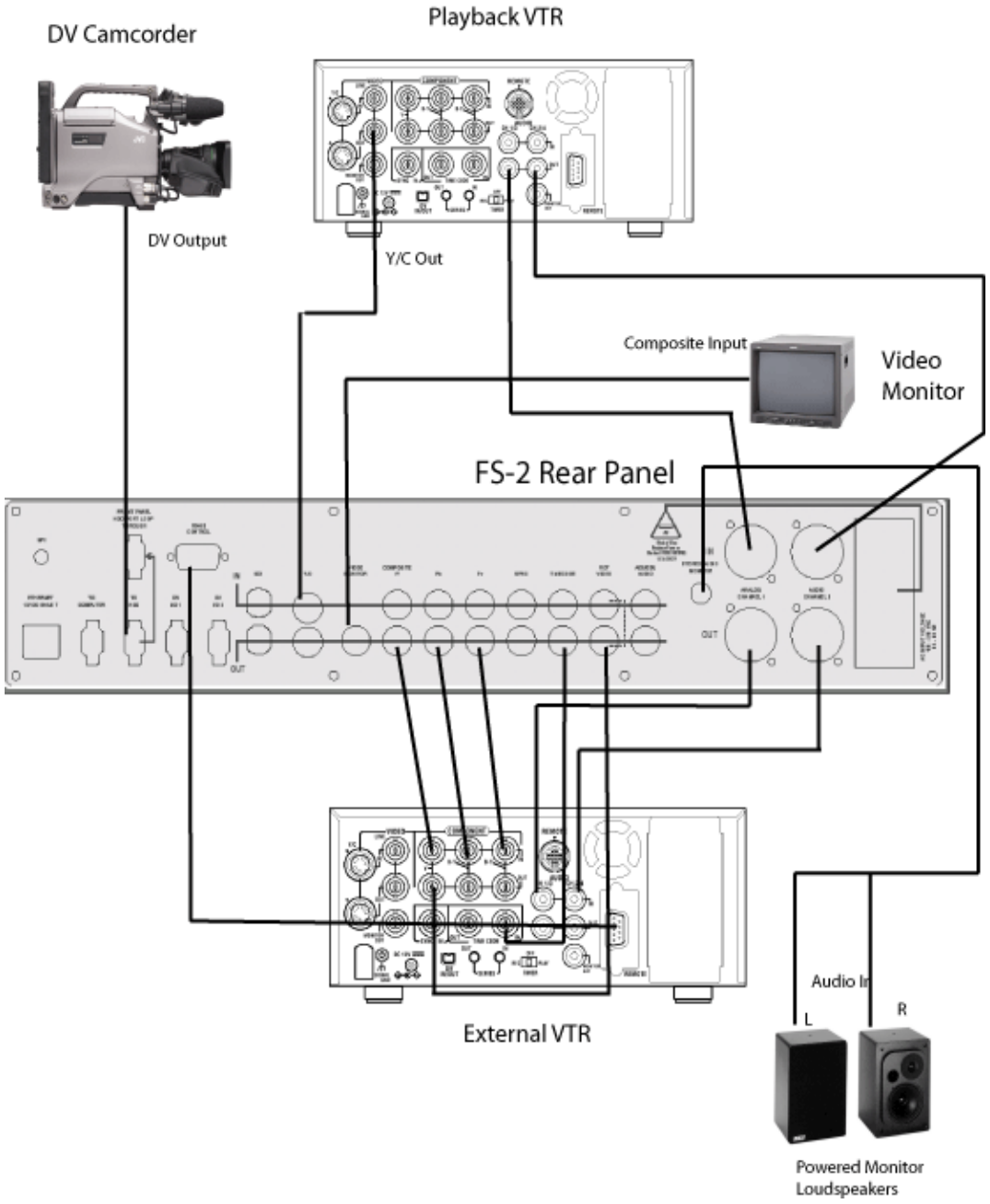
STEP 5: Connect Speakers or Headset (to monitor the audio) if desired.

STEP 6: Connect a Tape Drive if desired.

STEP 7: Connect a Reference Video signal if desired.

STEP 8: Connect a Time Code Generator if desired.

STEP 9: Connect an External Control Device (RS232) Device if desired.

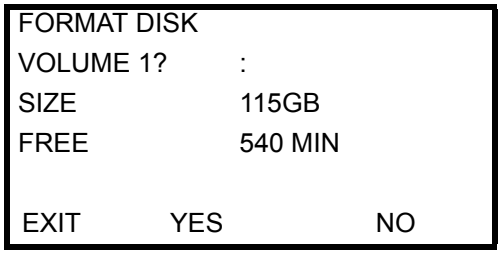

DV Camcorder
Playback VTR
DV Output
Y/C Out
Composite Input
Video
Monitor
FS-2 Rear Panel
OUT
External VTR
Audio In
L
R
Powered Monitor
Loudspeakers

Formatting the Drive

Use this procedure to format the FS-2 internal or connected external disk drives when it is not yet formatted.

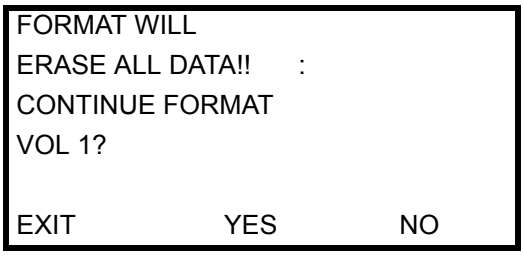
STEP 1: From the Utilities Menu, select FORMAT DISK as shown below.

When you make this selection, the following screen appears:



STEP 2: Select between volumes by pressing the ▶▶| and |◀◀ buttons.

- When you select the volume and press YES, the following screen appears:



- When you select YES, a message indicating that the formatting is progressing appears.

STEP 3: Press EXIT to return to the menu screen.

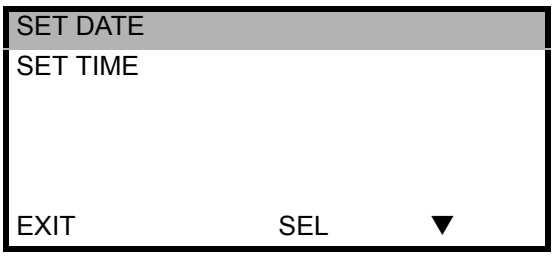
WARNING: FORMAT ERASES ALL DATA ON THE DISK DRIVE!

Setting the Time and Date

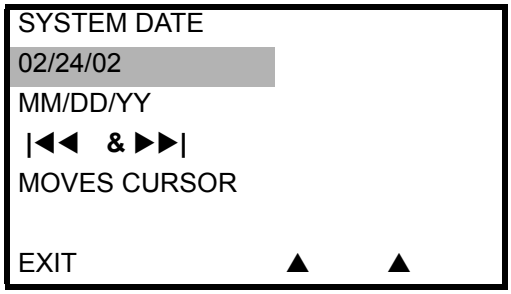
Before using the FS-2, use this procedure to set the time and date.

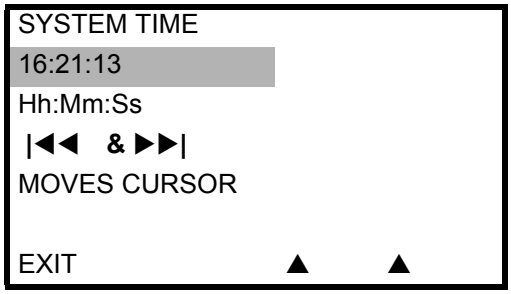
STEP 1: Select the Setup Menu.

STEP 2: Select SET DATE & TIME. The following screen appears.



STEP 3: Select SET DATE or SET TIME and press SEL to open the sub menu as shown below.





STEP 4: Scroll from value to value using the FORWARD and BACK INDEX Buttons.

STEP 5: Press the DOWN and UP arrows to scroll though digits in value.

STEP 6: Press EXIT to return to the menu screen.

Regardless of the display, the file name always remains YYYYMMDD-HHMMSS.xxx (Year-Month-Date-Hour-Minute-Second).

CHAPTER 2
FS-2 FUNCTIONS

This chapter contains the following sections:

- Edit/Utility/Input Buttons
- LCD Menu Soft Keys
- Transport Control Keys
- LCD Display
- FS-2 Menus and Functions

Edit/Utility/Input Buttons

To the right of the hard disk drive are a bank of 15 buttons as shown below.

MARK IN	MARK OUT	PLAY LIST	KEEPER	FOLDER
OSD	HDD	LOCK	REMOTE	E-E
CMPST	Y/C	CMPNT	SDI	DV

The first contains five buttons that are Edit functions keys. The second row consists of five buttons that are Utility keys. The third row has five buttons that are Input buttons.

Edit Function Keys

MARK IN	MARK OUT	PLAY LIST	KEEPER	FOLDER

MARK IN - Mark In Key

Use the MARK IN key to mark a particular frame as a starting point when creating a clip for a playlist. Refer to “Playlist” on page 2-12 of this user guide for more information about Playlists.

NOTE: It is only possible to mark in and outpoints during playback.

MARK OUT - Mark Out Key

Use the MARK OUT key to mark a particular frame as an ending point when creating a clip for a playlist.

NOTE: Once you have selected In and Out points, press the PLAYLIST key. (The In and Out key lights will turn off). You are then free to add more clips to the play list by again selecting In and Out points. When finished, go to the PLAYLIST menu under SETUP.

PLAYLIST – Add to Playlist key

Press this key during stop or play to add a current clip to the playlist.

Once In and Out points have been selected, press this key to add selected clips to the playlist.

KEEPER - Keeper Key

By pressing the Keeper key during a recording, you can mark each clip into the KEEPER folder on disk.

To add all KEEPER clips to the KEEPER folder on the disk drive, select UTILITIES->ORGANIZE FOLD from the FS-2 menu.

FOLDER - Folder Key

By pressing the Folder key during a recording, you can mark each clip into particular pre-named folders on disk (up to 10 folders can be prenamed. Default names for the folders are 0 through 9. Refer to “How to Mark Scenes” on page 3-7 of this User Guide to setup Scene Marking folders).

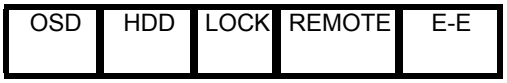
By continually pressing the FOLDER key, you can scroll though the available folders. You can also SCENE MARK clips to folders using the numeric keypad on the optional remote control units. SCENE MARK can be marked on the current clip during recording, playback or in stop mode. Once selected, the clip is marked for placement into that particular folder.

To add all SCENE MARKED clips to their respective folders on the disk drive, select UTILITIES -> ORGANIZE CLIP from the FS-2 menu.

For more on SCENE MARKING, refer to “How to Mark Scenes” on page 3-7 of this user guide.

If the FOLDER key is lit during playback, the FS-2 PLAY FROM mode is set to FOLDER.

Utility Function Keys



OSD - (On Screen Display)

Press this key to enable on screen display on the monitor output (composite). By continuously pressing the OSD button, the key scrolls between off, absolute timecode, counter timecode and the menu. When off, the key will not light.

HDD – HDD Bypass Key

Press this key to immediately open the HDD Bypass confirm screen as described in the HDD Bypass section of the Menu. For more information, refer to “HDD Bypass” on page 2-15

LOCK – Keypad Lock Key

This key turns lock on or off. When the key is lit, the keypad is locked. When off, it is not locked.

REMOTE – Remote Key

When you press this key, the FS-2 goes directly to the REMOTE mode as described under the Control Modes menu. The key will backlight in Local mode. When in the FS-2 is in remote mode, you cannot use front panel keys for operation.

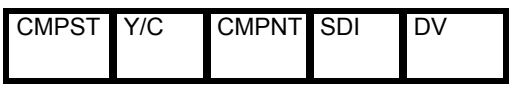
Another press exits REMOTE mode and the backlight turns off.

E-E – Electronic to Electronic Key

When you press this key, the selected input is passed on to all outputs on the FS-2 regardless of what state the unit is in (STOP, REC and so on.). The only time output is stopped is when something is being played back from disk.

Input Source Selection Keys

In all cases, when selected, the key lights. Switching is not seamless. You cannot change inputs while in record mode.



CMPST – Composite Video Source Input Key

Press this key to select composite video as the input source.

The default audio link is balanced analog audio. You can also select AES/EBU audio as the input link in the SETUP->AUDIO INPUT menu.

Y/C – S-Video

Press this key to select S-Video (Y/C) as the input source.

The default audio link is balanced analog audio. You can also select AES/EBU audio as the input link in the SETUP->AUDIO INPUT menu.

CMPNT – Component Video Source Input Key

Press this key to select Component video (Y, R-Y, B-Y) as the input source.

The default audio link is balanced analog audio. You can also select AES/EBU audio as the input link in the SETUP->AUDIO INPUT menu.

SDI Serial Digital Video Source Input Key

Press this key to select SDI video (SMPTE 259M) as the input source.

The default audio link is embedded AES/EBU digital audio in the stream. You can also select either balanced analog audio or separate AES/EBU audio as the input link in the SETUP->AUDIO INPUT menu.

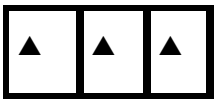
DV Video Source Input Key

Press this key to select DV video (25Mb/s) as the input source.

The default audio link is embedded 2-channel or 4-channel digital audio in the stream. You can also select either balanced analog audio or AES/EBU audio as the input link in the SETUP->AUDIO INPUT menu.

LCD Menu Soft Keys

The three keys below the FS-2 LCD display are soft keys for navigating and selecting items in the FS-2 menu.

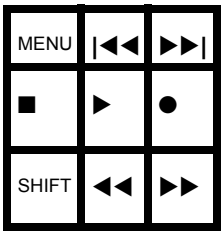


These keys are also utilized for selecting different display modes. They are called soft because their function changes depending upon what is displayed on the LCD above the particular key.

NOTE: In some cases when navigating the FS-2 menus, you can use the right soft key to scroll down through the menu. To scroll up, just hold down the SHIFT key as well as the right soft key.

Transport Control Keys

This set of buttons controls playback and record functions of the FS-2. These functions include play, reverse play, fast forward, fast rewind, forward frame, back frame, next track, previous track, stop, and record. This area also features hot keys for changing, controlling, and navigating the FS-2 menu system. Each of these keys is described below as shown in order left to right, top to bottom.



MENU Menu Key

Press this key to launch the FS-2 menu system. Once pressed, the Menu screen appears on the FS-2 LCD and the button lights. If you press the MENU key while in a particular screen in the menu system, that menu will be marked and the MENU key will light. You can then EXIT the menu and perform other functions. If your press the MENU key at anytime, you will return to the marked MENU (except if you are in REC mode).

|◀◀ Back Index Key

Press this key to return to the beginning of the current clip if in playback mode. Press it twice to return to the previous clip during playback. In Stop mode press it to return to the beginning of the previous clip. If you press SHIFT and Back Index, the previous disk drive is selected.

▶▶| Forward Index Key

Press this key to skip forward to the next sequential clip for playback. If you press SHIFT, the back index goes to the next disk drive.

■ Stop Key

Press this key to stop the selected mode and return the FS-2 to Pause. Press it again to put the FS-2 into STOP (standby with splash screen). The splash screen is the first frame of the selected clip when PREVIEW is set to on or it can be set by the end user. When the FS-2 is in Stop mode, the key lights.

▶ Play Key

Press this key to start playback of the selected clip. If you press the SHIFT key plus the PLAY button, the FS-2 immediately goes into reverse play mode.

● Record Key (Red)

Press this key once when the FS-2 is in STOP mode and the FS-2 goes into REC-PAUSE. The Rec button flashes. Press it again to start recording. If you press REC during a recording, the current clip is closed and a new clip is created without dropping any frames. This key is the only key that is RED on the front panel.

If you press REC and SHIFT simultaneously, to capture a single frame of video. In a particular session, all single frames of video are saved as part of the same clip on disk.

SHIFT Shift Key

Use the SHIFT key to give particular keys a secondary functionality. When you press it, the SHIFT key lights and remains in SHIFT mode until the button is released. The SHIFT mode of particular keys is listed below that key or displayed on the FS-2 LCD.

◀◀ *Back Search Key*

Press the Back Search button to allow video to be played at different speeds (both slower and faster than real-time). Refer to the NOTE: under Forward Search Key for more information.

▶▶ Forward Search Key

Press the Forward Search button to play video different speeds (both slower and faster than real-time). Refer to the NOTE: below for more information.

NOTE: Pressing the FF Search button multiple times results in increases in the search speed. This mode is bidirectional in forward X times normal search speed. Press the Back Search button to cause the FF speed to slow down by one step.

For instance, if you are in 10X FF speed and you press the Back Search button once, you are in 2X FF mode. This also applies to backward search speeds. The default speed resolution is as follows (NTSC and PAL have slightly different multiples for both greater and less than 1X play speed):

- REVERSE: -30X, -10X, -2X, -1X (reverse play), -1/2X(-15fps), Still.
- FORWARD: Still, +1/2X (+15fps), +1X (play), +2X, +10X, +30X

Standard Forward Search and Reverse Search also have a “higher resolution” mode where more speeds are available. This mode can be set in the FF/RW MENU in the FS-2 Setup Menu. Once set, these speed resolutions become the default when you press Fast Backward or Fast Forward.

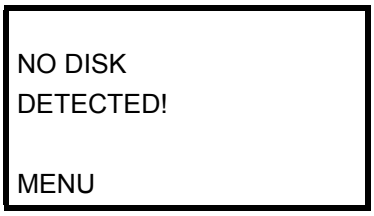
- REVERSE: -30X, -25X, -18X, -15X, -12X, -10X, -8X, -5X, -4X, -3X, -2X, -1/30, -1/15, -1/10, -1/6, -1/5, -1/3,-1/2
- FORWARD: +30X, +25X, +18X, +15X, +12X, +10X, +8X, +5X, +4X, +3X, +2X, +1/30, +1/15, +1/10, +1/6, +1/5, +1/3, +1/2

LCD Display

The FS-2 LCD screen displays different FS-2 modes and states. On boot up, the FS-2 displays the following screen:

Depending on the connected disk drive, the FS-2 may or may not display “Please Wait” during boot up.

Once booted up, if no disk drive is connected to the FS-2 (either through the internal slot or externally via the HDD I/O port), the following screen appears:



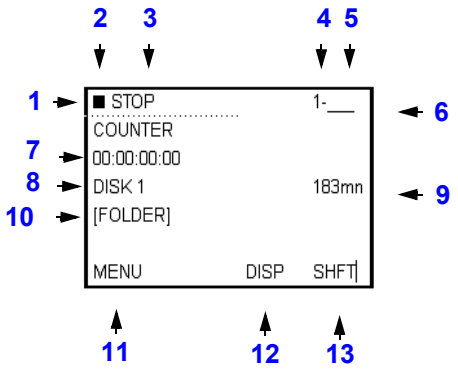
Insert a drive into the front panel drive bay or connect a FireWire disk drive to the HDD I/O port.

If you received a drive from Focus Enhancements, it should be configured and ready to use. If the message “No Disk Detected” appears, make sure the drive is inserted properly.

If the message “No Format Detected” appears, you must partition and format the inserted drive before use. The FS-2 prompts you through the steps required to perform a format.

WARNING: Formatting and partitioning erases all data on a disk!

Once ready for use, the FS-2 default Splash Screen appears as follows:



(1) Play/Record Status Symbol

This symbol displays a graphical representation of the current FS-2 state as follows:

■ - STOP

▶,◀ - Play or Reverse play

▶▶ - Fast Forward search and speed

◀◀ - Fast Back Search and Speed

● - Record and Record Mode

|| - Pause

NOTE: Each symbol has multiple display modes. For a complete list, refer to “FS- 2 LCD Display Modes” on page 4-3 of this user guide.

(2) Record/Play Status Indicator

In this space, the FS-2 displays a character that indicates what record or playback mode it is in. The characters displayed and their respective modes are listed in “FS- 2 LCD Display Modes” on page 4-3 of this user guide.

(3) Current System Status

The current system status of the FS-2 is displayed in the top left corner of the LCD display. For instance, it displays whether the FS-2 is in record, play, stop, pause, fast search or slow motion modes.

(4) Volume Number

The volume or disk number of the current clip recording or playback session is displayed in the top right corner of the LCD display. For example, a display value of “2-014” identifies a track as being on volume 2.

(5) Track or Clip Number

The track number is displayed in the top right corner of the LCD Display. This is the current clip or track number being recorded or played back. For example, a display value of “2-014” identifies a track as being clip 14 on volume 2.

(6) Timecode/User Bit Display Mode

This identifies the display mode for timecode or user bit values. Selections are:

- COUNTER - Counts frames during record or playback of the current clip only.
- REMAINING - Counts down the number of frames available (time) on a particular disk during a record session. In a playback session, this display shows the remaining time on the current clip.
- DV NTSC or PAL - Displays the external timecode value being generated by a camcorder or other device during a record session. Timecode mode has to be set to EXT TC for this function to operate (refer to “TC MODE” on page 2-19 of this user guide). In playback mode, this displays the embedded DV timecode value in a particular track.
- USER BIT - Displays the set user bit value in a particular clip. A user bit value must be added for this to display (refer to “TC SET” on page 2-20 of this user guide).
- ABSOLUTE - Displays an absolute timecode value for the particular session (sum of all COUNTER timecodes on connected volumes). This is primarily used when you set the FS-2 to AV/C mode and are controlling it with an external FireWire device, such as a computer.

NOTE: The FS-2 will not accept NDF TC values in DF TC mode.

(7) Timecode or User Bit Value

Displays the timecode or user bit value of display mode selected as follows:

00:00:00:00 - Drop Frame

00;00;00;00 - Non Drop Frame

(8) Current Disk Volume

Displays the current disk volume in relation to available space.

(9) Available Space on Volume

Displays the space in time available on the current volume, for example,

DISK 1 183min - Current Disk time remaining is 183 minutes

NO DISK - No attached Disk

(10) Folder Display

In record or playback, this displays the particular folder a clip is in (if applicable). If playing an entire folder (PLAY FROM menu set to particular folder), it displays the folder name as follows: [FOLDER].

(11) Soft Key One (MENU) Function Display

Displays the current function related to Soft Key one (left key on the top row of buttons). You can use this key for opening the FS-2 Menu and also as a STOP key during a recording.

(12) Soft Key Two (DISP) Function Display

Displays current function of Soft Key two (middle key on the top row of buttons). This changes the TC display between COUNTER, REMAINING, DV TC (NTSC or PAL), USER BIT, and ABSOLUTE when in record or playback modes.

(13) Soft Key Three (SHFT) Function Display

Displays current function of Soft Key three (right key on the top row of buttons).

FS-2 Menus and Functions

The FS-2 features a comprehensive menu system which allows a number of features to be initiated and setup. The menu system contains the following selections:

- RECORD MODE
  - NORMAL REC
  - RETRO DISK
  - RETRO CACHE
  - LOOP RECORD
  - STILL
  - TIME LAPSE
- CONTROL MODE
  - LOCAL
  - REMOTE
  - AV/C
  - SYNCRO SLAVE
- PLAY MODE
  - PLAY CLIP
  - LOOP CLIP
  - LOOP ALL
  - PLAY ALL
- PLAY FROM MODE
  - TRACK LIST
  - PLAY LIST
  - FOLDER LIST
- PLAYLIST
  - OPEN
  - SAVE
  - NEW
  - EDIT
  - VIEW
  - DELETE LIST
- HDD BYPASS
- INTERNAL HDD
- RECORD FORMAT
  - RAW DV
  - AVI TYPE 1
  - AVI TYPE 2
  - CANOPUS AVI

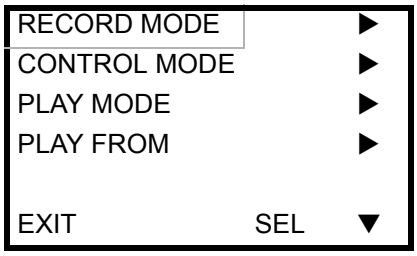
- MATROX AVI
- QUICKTIME
- AVID OMF
- PINNACLE
- MXF SONY
- MXF 1
- 24P AVI TYPE 2
- 24P QUICKTIME

◆ SETUP
- SET DATE & TIME
- OS VERSION NO
- OS UPGRADE
- PAL/NTSC
- RS422 REMOTE
- AUDIO INPUT
- AUDIO IN LEVELS
- TC MODE
- TC SET
- ON SCREEN DIS
- FF/RW HI RES
- GPI PORT
- BACKLIGHT
- STOP OUTPUT
- AUDIO CORRECT
- PREFERENCES
- ANALOG OUT
- NETWORK SETUP
- REF VIDEO
- VIDEO ADJUST

◆ UTILITIES
- ORGANIZE PINN
- ORGANIZE CLIP
- ORGANIZE OMF
- DELETE CLIP
- FORMAT
- PARTITION
- REPAIR
- FILE NAME
- FACTORY RESET

Each of these selections is explained in this chapter.

To enter the FS-2 MAIN MENU, press the MENU key or soft key 1 (MENU) while in Stop mode. The following MENU SCREEN appears:



Menu Items

The four line list indicates the currently highlighted menu item. Push soft key 3 (under the ▼ symbol) to see more selections. To scroll up (USE THE ▲ symbol) through the menu, press SHIFT + soft key 3.

Sub-Menu Available

The ▶ symbol at the end of a line indicates a menu item that has a sub-menu available. Press the SEL Soft Key, to display the sub-menu.

Soft Keys

- ◆ EXIT -- Press EXIT to return to the FS-2 MAIN MENU screen.
- ◆ SEL -- Press SEL to select the current menu item. If a sub-menu is available, it will open.
- ◆ Scroll Arrow -- The ▼ or ▲ symbol allows you to scroll up or down through menu items.

Record Mode Menu

The FS-2 RECORD MODE MENU allows you to enable different record functions.

- ◆ Select the mode. by pressing SEL to open the sub menu.
- ◆ Press EXIT to exit back to the menu screen.

Once a particular mode is selected in the Record Mode menu, the unit remains in that mode until a different mode is selected.

Available items in the RECORD MENU are:

- NORMAL REC
- RETRO DISK
- RETRO CACHE
- LOOP RECORD
- STILL
- TIME LAPSE

NOTE: When an inserted or attached HDD is nearly full, in some record sessions, the HDD time remaining may display “001min” remaining. If RECORD is pressed, the FS-2 sometimes displays NO SPACE LEFT. Focus Enhancements advises that when a disk drive is close to being full, you make sure other disk drives are readily available in order to avoid lost footage.

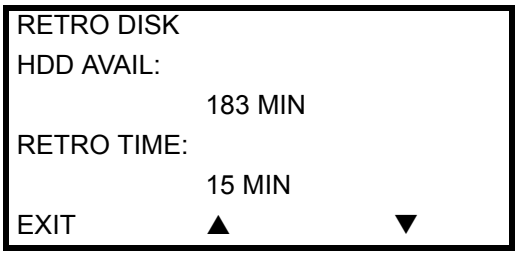
Normal Record

This is the standard and default record mode. When you press REC, the FS-2 begins standard recording. Press the REC once to put the FS-2 into REC PAUSE mode. Press it again to put the FS-2 into RECORD mode.

Retro Disk

RETRO DISK Record constantly buffers video in a loop to a determined amount of space on the hard-disk drive so that when record is triggered, a retro time period can be added to the beginning of any clip. You can select the RETRO DISK value to close the available disk drive space.

NOTE: It is not possible to set the retro time to the entire available capacity on the disk.



- Set RETRO TIME by pressing the ▲ and ▼ buttons. Time is selectable in one minute increments.
- Hold the button for more than 3 seconds to allow numbers to increase by 10 times.
- Press EXIT to return to the RECORD

Press the REC key when in RETRO DISK mode to put the FS-2 into a RETRO DISK state (the FS-2's REC button flashes as if in PAUSE state). The FS-2 is actually recording in this state, but until you press the REC key a second time, the video recorded records over itself in a continuous loop. RETRO DISK always keeps at least the selected amount of time in a series of one minute clips. For instance, if you set the RETRO DISK value to 3 minutes, the FS-2 will always have 3 minutes (made up of three, one (1) minute clips) of video saved to disk. As the recording goes past the 3 minute point, a fourth clip is created. Once that clip reaches one minute, the oldest of the previous 3 clips is deleted. Another fourth clip is then created.

If you select a RETRO session that is 60 minutes or greater, instead of one minute clips, the FS-2 creates 9 minute, 13 second clips (2GB clips on disk). The functioning of RETRO DISK remains the same. The larger file size prevents the FS-2 from reaching its 999 track limitation for very long RETRO records.

Due to the larger files sizes, the maximum amount of drive space available is decreased to accommodate the last recording in a session. For instance, if you have 90 minutes of disk space remaining, after you set RETRO record to greater than 60 minutes, the available space changes to 88 minutes of available disk space.

If you set RETRO time to 88 minutes, the recording will be made up of about nine and a half 9 minute, 13 second clips. There must be space available in this situation in order to record the final clip which eventually will write over clip 1. This ensures that at any given time, at least 88 minutes of video exist after a compete RETRO DISK record loop.

NOTE: The FS-2 must always have at least one minute of disk space (under 60 minutes) or 9 minutes, 13 seconds of disk space (when the RETRO DISK value is set to greater than 60 minutes) remaining in addition to the set RETRO DISK value, in order to function correctly. For

instance, it is not possible to set a RETRO DISK value of one minute if only one minute of disk space remains.

Once RETRO DISK time is set, you can exit the Menus and return to the Main Screen. An “L” will now appear next to the record symbol on the FS-2's display. Pressing the REC key once to put the FS-2 immediately into RETRO DISK RECORD. Clips are being recorded to disk for X number of minutes in one or nine minute increments (each as a separate track).

The REC button flashes (as when the unit is in pause). When you press the REC key, the FS-2 leaves RETRO DISK mode and goes into standard record.

All one minute tracks in the set loop sequence appear and are saved as their own tracks on disk (for example, 1-001, 1-002, 1-003 etc.) except for the recording that was in progress, which takes on the characteristics of a standard track. At this stage, the FS-2 is essentially in standard record mode (the “L” on the display disappears). No frames are lost across tracks during the record session.

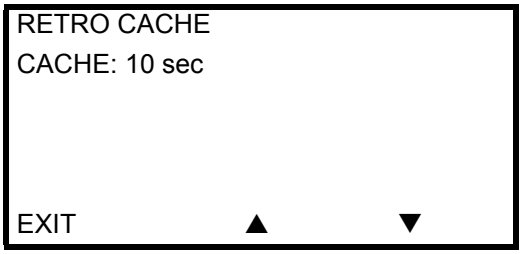
Once paused, the unit returns to RETRO DISK record mode again (the “L” reappears in the LCD and viewfinder) for further RETRO recordings or until it is disabled in the RETRO DISK Menu.

RETRO DISK can be used in LOCAL and SYNCRO SLAVE RECORD control modes.

WARNING: Make sure FS-2 is in STOP mode before removing the disk drive from the system. Do not attempt to remove when FS-2 is in REC or REC-PAUSE mode.

Retro Cache

RETRO CACHE Record constantly buffers video in a loop to a 10 second data buffer to cache video so that when record is begun, a retro time period can be added to the beginning of any clip.



Pressing the REC key when in RETRO CACHE mode puts the FS-2 into a RETRO CACHE state (the tally light on the FS-2 flashes as if in PAUSE state). The FS-2 is actually recording in this state, but until your press the RECORD key a second time, the video recorded records over itself in a continuous loop. It is much the same as RETRO DISK recording except that it utilizes a data buffer separate to the disk drive to cache video.

RETRO CACHE is also accurate down to the frame instead of the 1 minute clips used in RETRO DISK. Once a RETRO CACHE value is set, pressing the REC key once puts the FS-2 immediately into RETRO CACHE Record. A “C” now appears next to the record symbol on the FS-2's display.

Video is being recorded to the FS-2 cache. The REC button flashes (as if the unit is in pause). When you press the REC key, the FS-2 leaves the RETRO CACHE record mode and goes into standard record (the “C” on the display disappears).

Any clip recorded in this mode has the contents of the cache added to the beginning of the clip.

Once paused, the unit returns to the RETRO CACHE record mode again (the “C” reappears in the LCD) for further RETRO CACHE recordings or until it is disabled in the RETRO CACHE REC Menu.

RETRO CACHE RECORD can be used in LOCAL and SYNCRO SLAVE RECORD control modes.

Loop Record

When you select LOOP RECORD when REC has begun, video is recorded to available disk space. Clips are recorded to disk continuously in one-minute clips (up to 60 minutes – over 60 minutes, 2GB files).

When the disk capacity’s record time is reached, an additional one-minute (or 2GB) segment is created. After this clip is complete, the oldest one-minute clip (or 2GB segment) is recorded over, followed by each sequential oldest clip.

When you press STOP during a record session, recording stops and clips in the current LOOP RECORD session are saved to disk. They are also saved in a single folder.

NOTE: Loop record works with only one disk drive.

Still

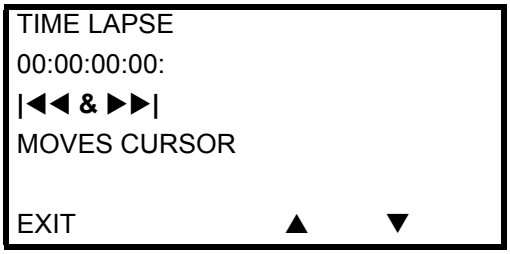
When you select STILL when REC has begun, a single frame is grabbed.

You can grab a still quickly by pressing SHIFT + the Record button on the front panel.

Use STILL with LOCAL and SYNCRO RECORD control modes. If STILL is in the RECORD MODE when power is cut to the unit or it is turned off, on reboot, the FS-2 goes to NORMAL REC mode.

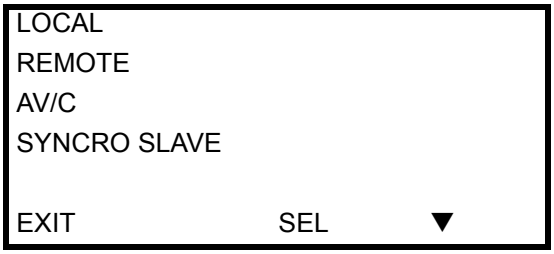
Time Lapse

You can select an interval of up to twenty-four hours. The interval is the period of time between the FS-2 capture's of a single frame of video (a value of 00:00:00:00 means no frames will be recorded).



- Set REC INTERVAL by pressing the TIME ▲ and ▼ buttons. Select the time in seconds (up to 59), then minutes up to 59, then hours up to 23.
- Use |◀◀ and ▶▶| keys to scroll between values.
- Press EXIT to return to the menu screen.

Control Mode



- Select the Control mode. The highlighted mode is the current mode after exit.
- Press EXIT to return to the menu screen.

Control Mode has the following functions:

- LOCAL
- REMOTE
- AV/C
- SYNCRO SLAVE

Local

Select this function to control the FS-2 from the front panel buttons only. You can also control the FS-2 with the optional wired remote control units (same as those for the FS-3 and DR-DV5000).

Remote

Select this function to control the FS-2 by an external device through the RS-422 port. The FS-2 takes on the characteristics of a VTR as setup in the RS422 MENU screen in the SETUP MENU. You cannot use the FS-2 front panel controls in this mode.

The FS-2 has a menu item that allows the FS-2 to appear to external controllers as a Sony BVW-75 BetaSP VTR when in Remote RS422 mode. It also has a generic RS422 mode.

In remote, you can also slave an FS-2 to another device (such as a Betacam or other non-DV deck) using the RS422 port.

NOTE: Not all controllable functions of a BVW-75 are available on the FS-2. This mode is only for greater compatibility with existing control systems.

AV/C

Use this function in PLAYBACK and other situations where the FS-2 is controlled by an external FireWire device (such as a DV NLE system).

NOTE: AV/C does not function completely with all NLE systems. Contract Focus Enhancements technical support for more information.

Syncro Slaved

In SYNCRO SLAVED mode, a camcorder and the FS-2 share the same REC function and the FS-2 is slaved to the camcorder. Once it is set and you exit the CONTROL MENU, they return to the default splash screen. The FS-2 also immediately enters REC PAUSE mode and a "Y" appears next to the record symbol on the FS-2 interface.

All REC and REC PAUSE functions are controlled by the camcorder exclusively. Every time you press the camcorder REC button, the FS-2 goes into the selected RECORD MODE. When you press it a second time, the FS-2 goes into REC PAUSE. Press the REC button again on the camcorder to start the selected RECORD MODE. At this point, a new track is created on disk.

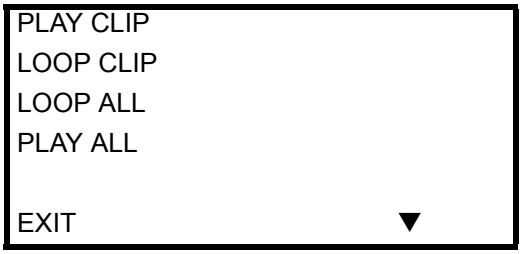
When used with RETRO DISK or RETRO CACHE functions, as soon as SYNCRO SLAVE is set, the camcorder begins recording to disk. Press the REC button on the camcorder to move the FS-2 out of RETRO DISK or RETRO CACHE and puts it into standard REC mode. When the camcorder is triggered back into REC PAUSE mode, the FS-2 once again goes into RETRO DISK or RETRO CACHE mode.

The FS-2 buttons (other than MENU) are locked out when in this mode. It is also not possible to use the optional FS-2 remote control units. You can only exit SYNCRO SLAVE by entering the CONTROL MENU which you can do directly by pressing the MENU button when on the FS-2 default splash screen. If the camcorder is set to VTR mode, the FS-2's control panel becomes active in order to allow playback.

If a tape ends while using SYNCRO SLAVE mode, the FS-2 continues to record.

To STOP a recording, push the FS-2 STOP button twice.

Play Mode



- Select the mode. The highlighted mode is the current mode after exit.
- Press EXIT to return to the menu screen. The default mode is PLAY CLIP.

The play mode has the following functions:

- PLAY CLIP
- LOOP CLIP
- LOOP ALL
- PLAY ALL

Play Clip

For this function, the FS-2 plays the selected clip from start to finish when you press the PLAY button. At the end of the particular clip, the FS-2 pauses.

Loop Clip

For this function, the FS-2 plays the selected clip from start to finish. Immediately after completing the clip, the FS-2 begins playing the clip again without a pause. It stays in this state until stopped.

Loop All

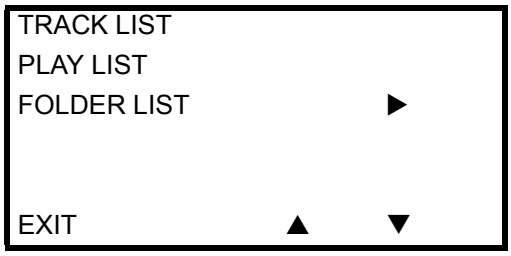
For this function, the FS-2 plays the entire contents of the disk (all clips) in order from start to finish. At the end of the last clip, the FS-2 begins to play from the beginning of the first clip again without a pause. It stays in this state until stopped.

Play All

For this function, the FS-2 plays the entire contents of the disk (all clips) in order from start to finish. At the end of the last clip, the FS-2 pauses.

Play From Mode

This selection allows your to select where clips will be played back from. There are three options available.



- Select the mode. The highlighted mode is the current mode after exit.
- Press SEL for the highlighted menu item to open the sub-menu. In sub-menu, the currently highlighted mode is the current mode after exit.
- Scroll from value to value using the FORWARD and BACK INDEX Buttons.
- Press the DOWN and UP arrows to scroll though digits in value.
- Press EXIT to return to the menu screen.

Track List

When you select this setting, all clips on attached disk drives are played back sequentially based on the order of their base file name regardless of whether they have been marked in the KEEPER or SCENE MARKING folders. If Track List is selected, all PLAY MODES relate to all clips on the connected disk drives.

Play List

This selection plays the items in the play list.

Folder List

When you selected this setting, you can play back clips only from a selected folder. Select a particular folder to play clips from. Highlighted folder is the selected folder after exit. Once set and when PLAY is pressed, only clips within that particular folder will playback. If Folder List is selected, all PLAY MODES relate to clips in the selected folder only.

When the FS-2 PLAY MENU is set to “TRACKLIST” the name of the SCENE MARKED folder appears without brackets on the LCD display (for example, 2 SCENE 2).

When the PLAY FROM menu is set to “FOLDERS”, the name of the SCENE MARKED folder appears in brackets on the LCD display (for example, 2 <SCENE 2>).

Playlist

The FS-2 playlist feature allows you to playback clips in a custom, user defined, order.

This selection has the following choices:

- OPEN
- SAVE
- NEW
- EDIT
- VIEW
- DELETE LIST

Playlists are created using the FS-2 front panel. You can create custom in and out play points on clips. Multiple playlist can be saved on disk and can be opened, saved and edited at any time. Use the PLAY FROM menu to select particular playlists to playback. Use the PLAYLIST menu selection to modify, open or save playlists.

Play lists can be named with an 8 character/number name (such as 04-05-04 or PROMO2).

A playlist can consist of multiple sequences (a sequence can be entire clip, a portion of a clip or combined portions of clips). Each sequence gets a number in the playlist starting with 0001. The corresponding track number of the clip sequence is also displayed (for example, 1-005 is a sequence from track five on volume 1).

The PLAYLIST menu appears as follows:

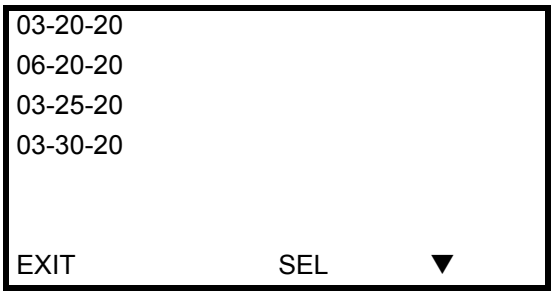
Select the mode to activate it.

- Press SEL for the highlighted menu item to open the sub-menu. In sub-menu, the currently highlighted mode is the current mode after exit.
- Press EXIT to return to the menu screen. These settings are saved on power down.

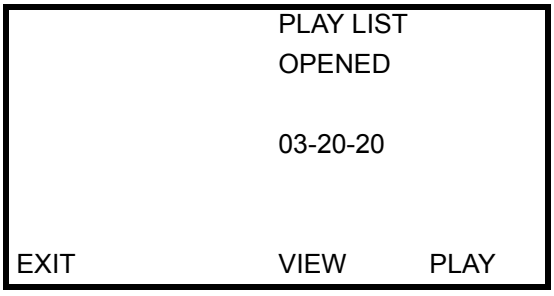
Open

Open allows you to open a playlist on disk. Do this as follows:

STEP 1: In the PLAYLIST menu, select the OPEN option and press SEL to open. A display similar to the following appears.



STEP 2: Once the sub menu is opened, select the desired playlist from the list. A display similar to the following appears.



STEP 3: Once selected, you can VIEW or PLAY the particular playlist.

If PLAY is selected, exit to the main display and press play. The PLAYLIST button lights and playback will be from the selected Playlist only.

This can also be done form the PLAY FROM -> PLAYLIST menu.

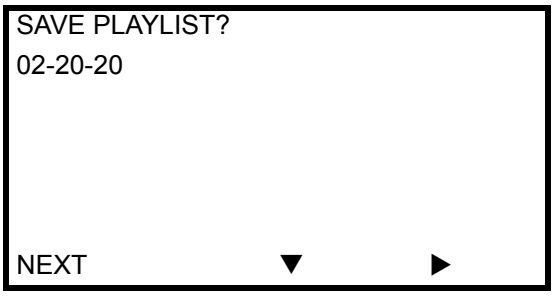
Only one playlist can be opened at a time.

Save

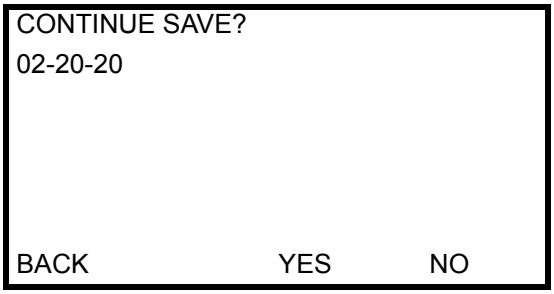
When a playlist has been created or modified, save allows changes that were made to be saved to that playlist.

If you modify a playlist or create a new one and try to exit the playlist menu, the SAVE function will automatically appear.

If you have made modifications and wish to save them as a new file name, modify the file name prior to saving it.



Select NEXT and a display similar to the following appears.



Select YES or NO.

New

Even if a playlist is open, you can begin creating a new one. If you select NEW, the current playlist will be closed and any new additions will be saved in the new playlist.

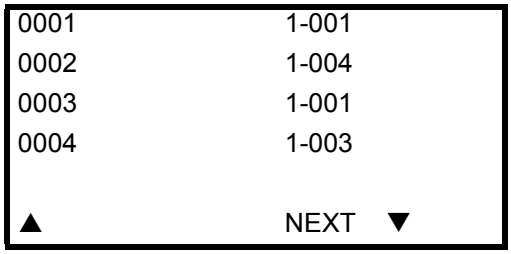
Edit

The edit menu allows you to modify an existing playlist.

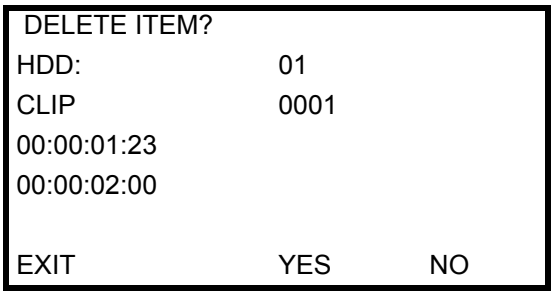
The selected playlist must be opened in order to edit. EDIT allows you to remove, insert or move clips within a playlist.

To remove a clip, use the following steps:

STEP 1: Select EDIT from the PLAYLIST menu and then REMOVE CLIP. You are given a list of clips in the open playlist. (If no clips are in the playlist, the message "PLAYLIST EMPTY" will appear.).



STEP 2: Select the clip you wish to remove and then select NEXT.



You will be asked again if you are sure you want to delete the item from the playlist.

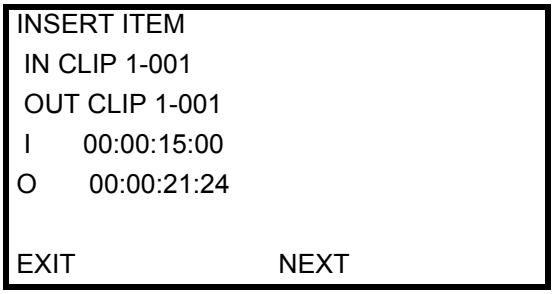
Once removed, the playlist will update.

Insert clip allows you to insert a selected clip in an existing playlist. A playlist must be opened and you must have selected in and out points for the clip you would like to insert before continuing.

STEP 1: From the PLAYLIST menu, select EDIT -> INSERT CLIP. The selected clip number and its details will be listed.

STEP 2: Press NEXT.

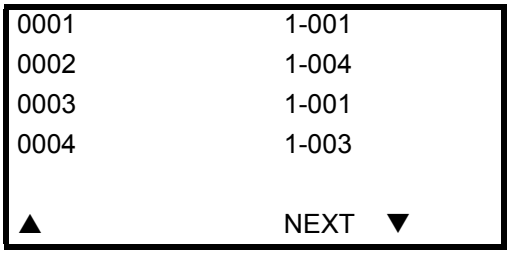
STEP 3: You are given the choice of inserting at the BEGIN, END or CUSTOM part of playlist. Once you have selected your choice, the updated playlist will be display.



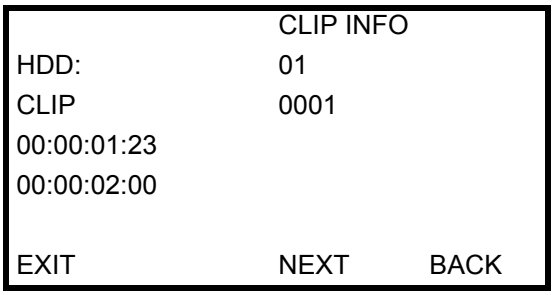
MOVE clip allows you to move a clip within an existing playlist. To move a clip, use the following steps:

STEP 1: Select MOVE CLIP from the PLAYLIST -> EDIT menu.

STEP 2: Once selected, scroll to the clip you wish to move.



STEP 3: Once selected, press NEXT. The clip info will display.



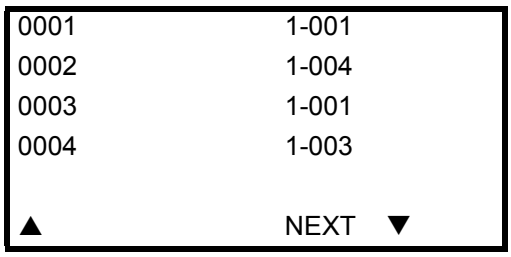
STEP 4: Select NEXT, EXIT or BACK. You will then be able to move the clip to the BEGIN, END or CUSTOM of the playlist.

STEP 5: Press NEXT. The updated playlist will be displayed.

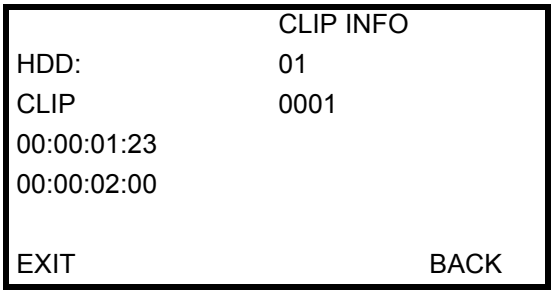
View

View allows you to view the track info of an OPEN playlist. A playlist must be opened in order to view.

STEP 1: Select VIEW from the PLAYLIST -> EDIT menu.



STEP 2: Scroll to the desired clip, then select NEXT. The clip info will display.



Delete List

Delete list allows you to delete an entire playlist.

STEP 1: Select DELETE LIST form the PLAYLIST menu. All the playlists on disk will be displayed.

STEP 2: Select the playlist you wish to delete and press SEL. You will be asked "DELETE PLAYLIST XX-XX-XX?

STEP 3: Press YES to continue delete.

HDD Bypass

HDD Bypass mode allows the connected FireWire HDD to be mounted/dismounted to a computer without removing.

In this mode, the computer connects to the "HDD I/O" port on the FS-2 Rear Connector Panel.

When HDD Bypass is selected, the following will display on the FS-2 LCD:

For more information, refer to "Playlist" on page 2-12 of this user guide.

- To Exit this mode, press the EXIT key.
- Be sure to properly dismount the FireWire drive from the computer system first before exiting HDD Bypass mode on FS-2.

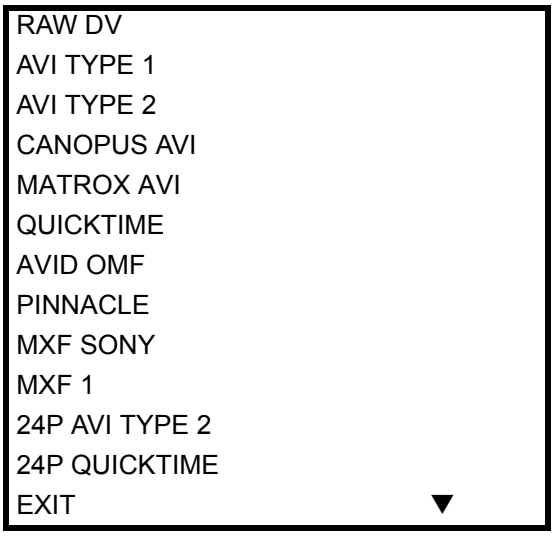
Internal HDD

The internal HDD function allows you to remove the front mounted IDE drive from FS-2 without first having to power the unit down.

- Select Internal HDD by pressing the SEL button.
- Answer YES to "Remove Internal HDD?" (Selected EXIT to exit from the menu).
- Remove the disk drive from FS-2 when prompted with "Remove HDD now. Then Press Exit.".

Record Format Mode

The RECORD FORMAT menu allows selection of particular DTE Technology native NLE file formats prior to recording. All files are in the DV25 standard.



- Select this format to activate it. The highlighted format is the current format after exit.
- Use ▼ to scroll through the selections.
- Press EXIT to return to the menu screen.

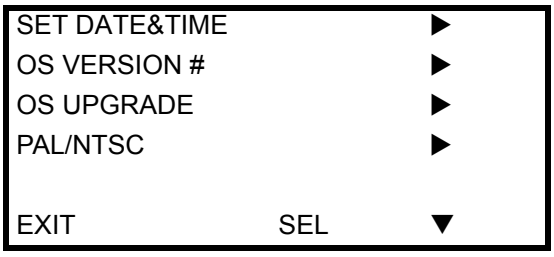
The RECORD FORMAT MODE menu contains the following selections:

- RAW DV
- AVI TYPE 1
- AVI TYPE 2
- CANOPUS AVI
- MATROX AVI
- QUICKTIME
- AVID OMF
- PINNACLE
- MXF SONY
- MXF 1
- 24P AVI TYPE 2
- 24P QUICKTIME

NOTE: When recording in AVID OMF or PINNACLE AVI format, you must first do an Organize Pinn or Organize OMF before using clips in an NLE. Refer to Page 2-25 for more details.

Setup Mode

The SETUP MENU allows you to set various functions of the FS-2.



- Select the Menu Item.
- Press SEL to open the sub menu (where applicable).
- Use ▼ to scroll through the selections.
- Press EXIT to return to the menu screen.

The SETUP menu contains the following selections:

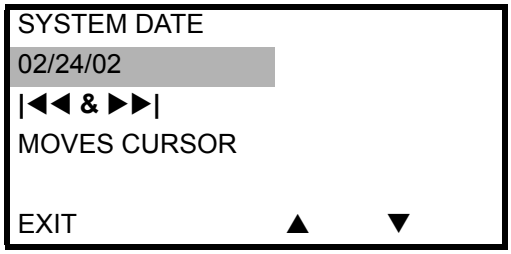
- SET DATE&TIME
- OS VERSION #
- OS UPGRADE
- PAL/NTSC
- RS422 REMOTE
- AUDIO IIN LEVEL
- TC MODE
- TC SET
- ON SCREEN DIS
- FF/RW HI RES
- GPI PORT
- BACKLIGHT
- STOP OUTPUT
- AUDIO CORRECT
- PREFERENCES
- ANALOG OUT
- NETWORK SETUP
- REF VIDEO
- VIDEO ADJUST

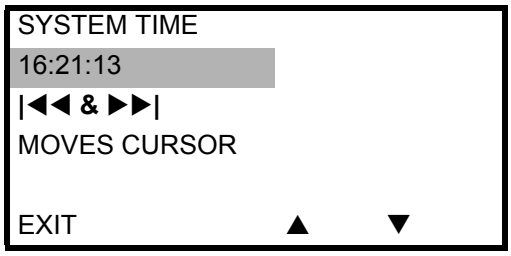
SET DATE & TIME

This selection provides a way to set date and time for file naming purposes. Date and Time are set in different menus.

- Select the Menu Item.

- Press SEL to open one of the following sub menus.





- Scroll from value to value using the FORWARD and BACK INDEX Buttons.
- Press the DOWN and UP arrows to scroll though digits in value.
- Press EXIT to return to the menu screen. Regardless of the display, the file name always remains YYYYMMDD-HHMMSS.xxx (Year-Month-Date-Hour-Minute-Second).

The date and time form the basis of the FS-2 file naming structure for use of clips on a computer.

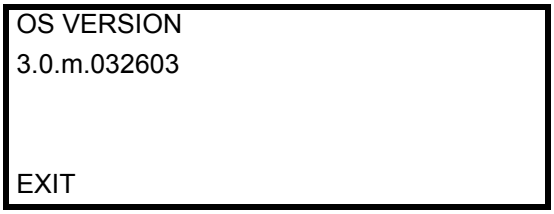
On the FS-2, files are identified by TRACK and VOLUME (disk drive) number on the LCD. For instance, a file on the FS-2 LCD identified as 1-043 is clip number 43 on Volume (disk) 1.

On a computer, files are identified by their base file name made up of DATE and TIME. For instance, a clip named 20030615-210943-01.mov is a clip that began recording at 9:09:43PM on June 15th. 2003.

NOTE: DATE/TIME is used when creating File name only. the FS-2 does not record this information into the stream. The FS-2 records DATE/TIME which is in the DV stream which is sent from the input source.

OS VERSION

This selection displays the current FS-2 Operating System Firmware version.



OS UPGRADE

To upgrade system software, you must download a new .bin file to a FireWire drive on your computer. The latest version of FS-2 software can be downloaded from http://www.focusinfo.com/support.

To install new OS software to FS-2, do the following:

STEP 1: Download software from the Focus Website to your local computer.

STEP 2: Unzip file using WinZip (Windows) or Stuffit (Macintosh) on a computer system with a FireWire (IEEE-1394) connection.

STEP 3: Rename the unzipped file called “XXXX.bin” to “fs2.bin”.

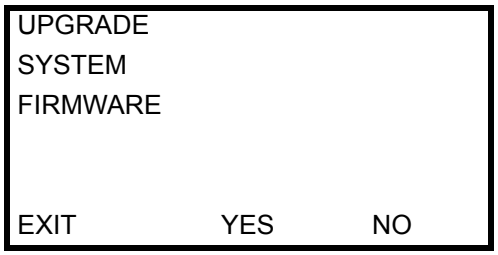
STEP 4: Connect a FireWire disk drive that has been used with FS-2 to the computer and copy over the file “fs2.bin”.

STEP 5: Disconnect the FireWire drive from computer and connect it to the FS-2.

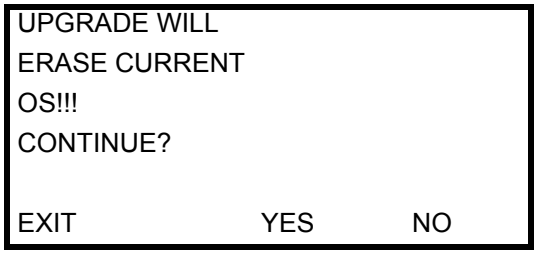
STEP 6: Power on FS-2 normally.

STEP 7: Enter the FS-2 menu and select “SETUP”.

STEP 8: From the SETUP menu, select “OS UPGRADE”. When you select OS upgrade, the following screen appears:



STEP 9: Select YES. You are warned with the following display:



STEP 10: Select YES to begin the OS upgrade.

A message appears indicating the upgrade has begun.

STEP 11: After upgrade is complete, power cycle the FS-2. The new software should now be loaded and ready to use.

If no .bin file is found, the screen will display “OS UPGRADE ERROR”. Check your connections and make sure you have the correct file name.

You must restart your system once an OS upgrade is complete.

NOTE: If you need to restore the factory default Operating System, hold down the Left and Middle soft keys under the LCD during boot up.

PAL/NTSC

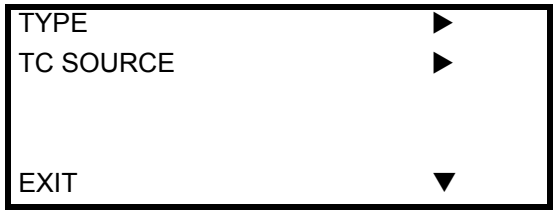
Use this screen to select the record standard as either PAL or NTSC. The highlighted selection is the current one after exit.

NOTE: Do not combine PAL and NTSC clips on a single drive.

RS422 REMOTE

This menu allows you to setup the FS-2 for remote operation via the RS422 control port.

For easy integration with existing control systems, you can make the FS-2 look like either a Sony BVW-75 Betacam SP deck or a generic recorder in terms of its control capabilities to outside devices. Using the TC SOURCE submenu, you can also select the timecode source for FS-2 control. Options are ABS, DV and COUNTER.



You can set the FS-2 to two different remote modes:

- BVW-75 – The FS-2 appears as and is identified as a Sony BVW-75 BetaSP deck to the remote control device.

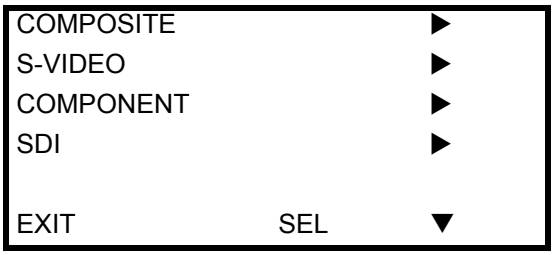
  NOTE: Some BVW-75 control functions are not available on the FS-2. The FS-2 mainly responds to commands such as PLAY, STOP, REWIND, REC, FF, and so on. Commands such as Insert, Edit, and other specialty commands are not possible.

- Generic - The FS-2 appears as and is identified as a generic device to the remote controller.

After you have set up RS422 to control the FS-2 using an external RS422 device, press the REMOTE button on the front panel or select REMOTE from the Control Mode menu.

AUDIO INPUT

In this menu, you can change the default audio input linked to a particular video input.



Select the mode to activate it.

- Press SEL for the highlighted menu item to open the sub-menu. In the sub-menu, the currently highlighted mode is the current mode after exit.
- Press EXIT to return to the menu screen. These settings are saved on power down.

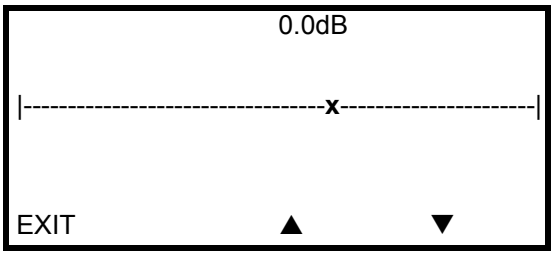
Each video input and its available audio inputs (defaults are underlined) are listed below:

- Composite: Analog Balanced Audio
  AES/EBU Digital Audio
- S-Video (Y/C): Analog Balanced Audio
  AES/EBU Digital Audio
- Component: Analog Balanced Audio
  AES/EBU Digital Audio
- SDI: Embedded
  Analog Balanced Audio
  AES/EBU Digital Audio
- DV: Embedded

AUDIO IN LEVELS

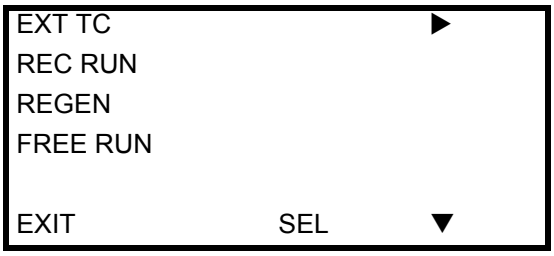
This menu item allows you to set the audio input levels for FS-2.

Adjust the audio level between -34.5dB and +12dB in 1.5dB increments.



TC MODE

This selection allows you to select different timecode options for use when FS-2 is recording.



Select the mode to activate it.

- Press SEL for the highlighted menu item to open the sub-menu. In sub-menu, the currently highlighted mode is the current mode after exit.
- Press EXIT to return to the menu screen. These settings are saved on power down.

The following selections are available:

- EXT TC Mode - Whatever the incoming timecode, the FS-2 records it. You can select between Selected Input, VITC Reference, VITC Analog, LTC, Firewire (DV), or SDI timecode. Select the desired TC value. Choosing EXT TC mode will clear any stored number.

  NOTE: If the FS-2 is set to EXT TC when in SYNCRO SLAVE mode, EXT TC will stop once tape in camcorder ends. Use different TC mode when using SYNCRO SLAVE. (TC Preset

cannot be changed while in the EXT TC mode.)

- REC RUN Mode - In this mode, the FS-2 does the following:

  (1) The last timecode number recorded + 1 is used as the timecode number for the first frame of the next recording.

  (2) The number entered by a setting in the TC PRESET menu is used for the first frame of the next recording.

  The last number used is stored in the memory, so this mode persists across recording sessions.

- REGEN Mode - After a disk is mounted (at startup, upon manual connect) and after the track list has been constructed, the FS-2 looks at the last track and looks at the timecode number of the last frame in that track. The FS-2 stores that number for use as the TC value (+ 1) for the first frame of the next recording. If the drive is empty, FS-2 uses the value (+ 1) stored in memory.
- FREE RUN Mode - When the user enables FREE RUN mode, the FS-2 begins counting from the value stored. If the user uses the TC PRESET function, when the number is entered and the TC PRESET menu is exited, the FS-2 begins counting.

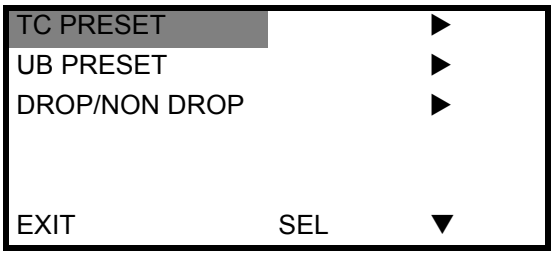
Once a timecode value is set and FS-2 is set to REC RUN or FREE RUN timecode settings, the preset value will be the starting point for timecode. Use the forward and back index buttons to move from value selection to value selection. Press the up and down arrows to set values.

TC SET

This menu allows you to set Timecode values for various modes. It also allows the selection of drop or non-drop frame (NTSC only) settings.

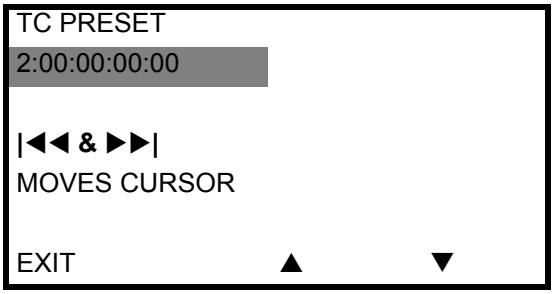
Once a timecode value is set and the FS-2 is set to REC RUN or FREE RUN timecode settings, the preset value will be the starting point for timecode. Use this menu as follows:

- Display this menu item by selecting it.
- Press SEL to open the sub menu.
- Press EXIT to return to the menu screen.



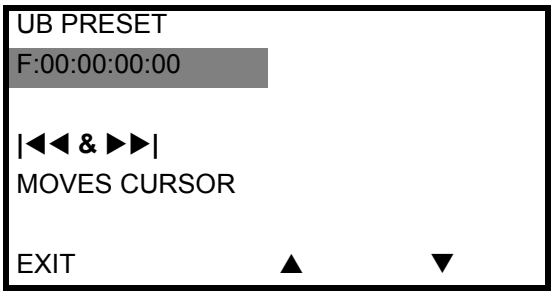
- For TC PRESET, scroll from value to value using the FORWARD and BACK INDEX Buttons.
- Press DOWN and UP arrow to scroll though digits in value.
- Press EXIT to return to the menu screen.

This selection allows you to set a user bit value.



- For UB Preset, scroll from value to value using the FORWARD and BACK INDEX Buttons.
- Press DOWN and UP arrow to scroll though digits in value.
- Press EXIT to return to the menu screen.

NOTE: You cannot set UB values after selecting EXT TC mode in the TC MODE menu.



- For DROP and NON-DROP, select the mode. The highlighted mode is the current mode after exit.
- Press EXIT to return to the menu screen.

For DROP and NON-DROP, select the mode. The highlighted mode is the current mode after exit. Pressing EXIT returns to the menu screen.

This item not applicable for PAL use. On the FS-2 display, DROP is identified by a (:) symbol and NON-DROP by a (;) symbol.

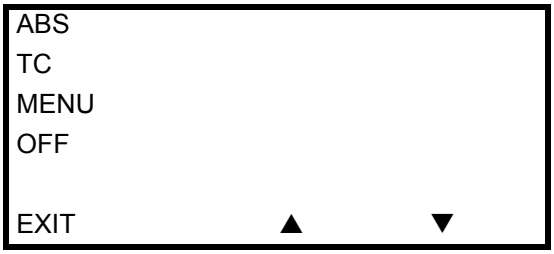
ON SCREEN DISPLAY

This Setup selection allows you to turn on or off the superimpose on FS-2's Monitor Output. The highlighted item is current after exit.

When ABS is selected, the ABS timecode value is displayed on the bottom center of the monitor output.

When TC is selected, the TC (Counter) timecode value is displayed on the bottom center of the monitor output.

When MENU is selected, the FS-2 Menu is displayed in the top left corner of the monitor output.



- Press DOWN and UP arrow to scroll though the selections.
- Press EXIT to return to the menu screen.

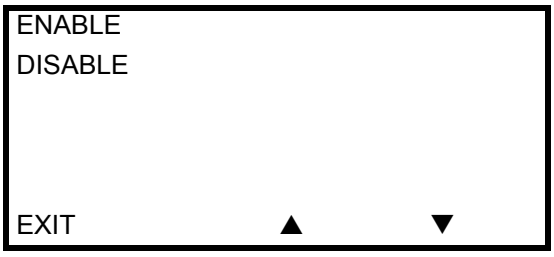
NOTE: By repeatedly pressing the front panel OSD key, you can cycle between these modes.

FF/RW HI RES

This allows the default for the FS-2 Fast Forward Search and Fast Back Search keys to have high resolution enabled or disabled as the default. Once set, the selection becomes the default.

- REVERSE: -30X, -25X, -18X, -15X, -12X, -10X, -8X, -5X, -4X, -3X, -2X, -1/30, -1/15, -1/10, -1/6, -1/5, -1/3,-1/2
- FORWARD: +30X, +25X, +18X, +15X, +12X, +10X, +8X, +5X, +4X, +3X, +2X, +1/30, +1/15, +1/10, +1/6, +1/5, +1/3, +1/2

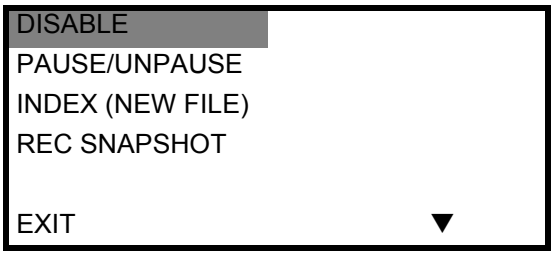
- Select this mode to activate it. The highlighted mode is the current mode after exit.
- Press EXIT to return to the menu screen.



GPI PORT

This menu allows you to change the setting of the GPI port.

- Select the function. The highlighted function is the current function after exit.
- Press EXIT to return to the menu screen.



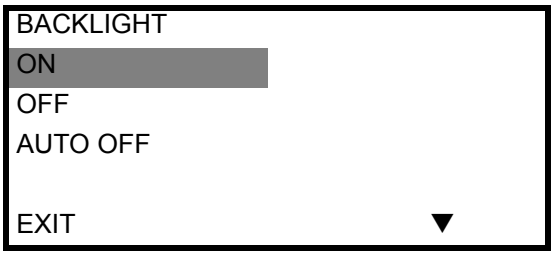
- DISABLE - This selection allows you to connect a 3.5mm to DB9 cable to the GPI port and control the FS-2 via RS232C from an external device. You can also use the FS-2 with the optional wired remote control unit.

The remaining three selections allow functions to occur from a simple contact closure as follows:.

- PAUSE/UNPAUSE -This selection allows control of pause and unpause during a record or playback session.
- INDEX (NEW FILE) - This selection allows a new file to be created during a record session without losing any frames.
- REC SNAPSHOT - This selection allows a single frame of video to be recorded to a file. Each sequential use of this function adds another frame to the same file until stopped.

BACK LIGHT

This selection allows you to enable or disable the FS-2 back-light.



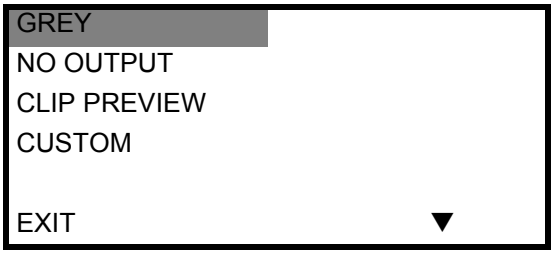
- Select the state. The highlighted state is the current one after exit.
- Press EXIT to return to the menu screen.

The ON setting keeps the back-light on permanently while the OFF setting keeps the back-light off permanently.

AUTO OFF turns off the back light after one minute. Press any keypad button on the FS-2 to turn the back-light back on in AUTO OFF state.

STOP OUTPUT

With this selection, you can set the default output picture while the FS-2 is in STOP mode and not in E-E mode. The selected mode is the current state after exit.



When you select GREY, a gray screen appears.

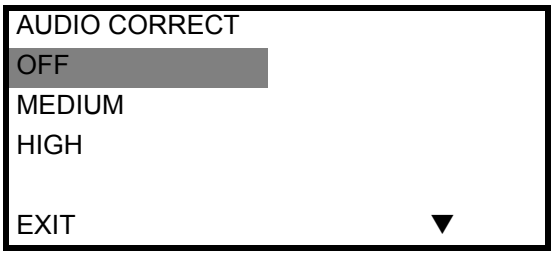
If you select NO OUTPUT, a blank screen appears.

If you select CLIP PREVIEW and scroll from one clip to the next on the FS-2 using the index forward/back buttons, the first frame of each clip is generated and shows on all outputs after 1 second if you pause on that clip.

If you select CUSTOM, the FS-2 looks on disk drive volume 1 for any clip named “SPLASH.dv” and always displays the first frame of that clip. You can name any RawDV clip “Splash.dv” and the first frame from that clip will appear as the default output in STOP mode.

AUDIO CORRECT

This sub-menu allows you to change the AUDIO CORRECTION setting on the FS-2.



- Select the state. The highlighted state is the current state after exit.
- Press EXIT to return to the menu screen.

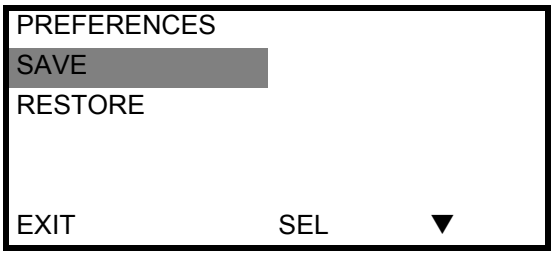
The AUDIO CORRECTION selection is an advanced feature of the FS-2. You should use the factory default settings for most operations (Factory default is MEDIUM).

Audio Correction Mode allows you to alter the performance of the audio error corrector while recording. It is useful when recording to the FS-2 from tapes with lots of dropouts. Error correction only effects AVI 2, Canopus AVI, Matrox AVI, QuickTime, AVID OMF, Pinnacle, MXF Sony, MXF 1, 24p QuickTime, and 24p AVI Type 2. It does not effect RawDV or AVI 1. The selections are:

- OFF: No audio correction.
- MEDIUM (default): For “normal” clean tape played back on a camcorder or other VTR with clean heads. There are occasional very short audio mutes.
- HIGH: For cases where there are visible picture disturbances and likely long audio dropouts (1/2 sec and up).

PREFERENCES

This menu allows you to select system preferences and save them to disk. This allows you to restore to other systems at a later date.



When you select ‘SAVE”, you are prompted with the message “SAVE CURRENT PREFERENCES?”. When you accept, a file is written to the connected disk drive saving the current user settings.

When you select RESTORE the FS-2 searches for a saved user preference on the disk and if found, restores your PREFERENCES. PREFERENCES are essentially a snapshot of all settings that can be saved on the FS-2.

ANALOG OUT

Composite or Component

With Analog Output, you can select the “Y” output on the rear panel for use as a composite signal or the Y signal on the component output.

When you select COMPONENT OUT, you can also select either SMPTE, BETACAM, or MII output levels. Refer to Chapter 4 for more information.

The selected mode is the current mode after you select Exit.

NETWORK SETTING MENU

With NETWORK SETUP, you can connect FS-2 to a network. When this is done, you can do FTP file transfers to/from FS-2 or control he FS-2 using Telnet. The NETWORK SETTINGS MENU contains the following:

- IP SETTINGS
- USER/PASSWORD
- VIEW IP INFO
- SERVICES

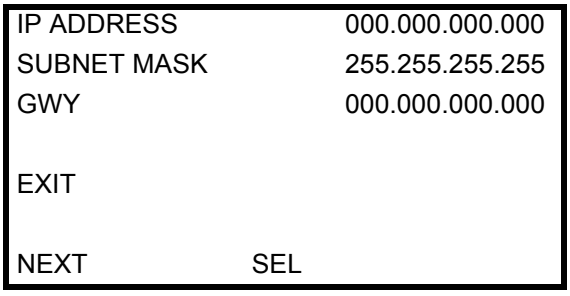
FOCUS Enhancements is in no way liable for device security (Telnet and FTP). Contact your system administrator regarding the best security practices.

IP SETTINGS

With the IP settings menu item, you can select either DHCP (the network provides the IP address) or a CUSTOM IP.

If you select DHCP and then EXIT, the FS-2 attempts to log onto the network.

If you select CUSTOM IP, a sub menu opens to ask you to insert an IP number, Sub Net Mask, and Gateway.



If you do not have these values, contact your system administrator. The default values for the IP address is 000.000.000.000, Sub Net Mask 255.255.255.000 and Gateway 000.000.000.000.

To modify the custom IP values, select the item to modify and then press the right arrow key to select the values. Use the Up arrow key to increase the value (HINT: press the SHIFT key on the FS-2 front panel plus the up arrow key to decrease a value).

Values loop back to the beginning once the maximum value has been entered.

To modify the next item or set of values, press the NEXT key on the FS-2 front panel.

Once complete, press the SEL key when EXIT is highlighted to exit the menu or the NEXT key to continue to modify items.

Once exited, the FS-2 attempts to log into the network and one of two things happen:

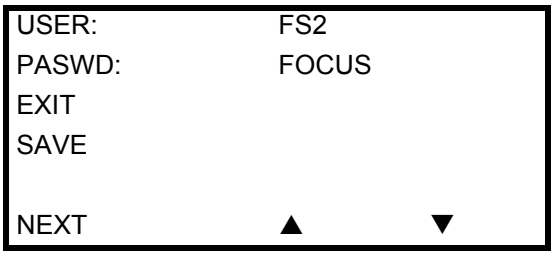
- If the FS-2 successfully logs onto a network, it displays NETWORK CONNECT SUCCEEDED.
- If the FS-2 is unable to log onto a network, it displays “NET CONNECT FAILED. CHECK NETWORK CABLE”.

Press the VERIFY button on the FS-2 to take you back to the IP Settings menu to verify your values.

Press the EXIT button to take you back to the SETUP menu.

USER/PASSWORD

This menu allows you to set a username and password for the FS-2 to connect to a network. If you are unsure what username and password to use, contact you system administrator.



To modify the username and password, select the item to modify and then press the right arrow key to select values.

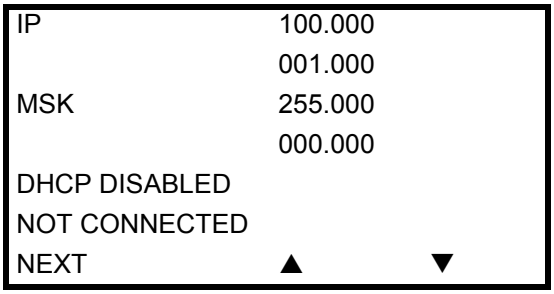
Use the Up arrow key to increase the value (HINT: press the SHIFT key on the FS-2 front panel plus the Up arrow key to decrease a value).

Values loop back to the beginning once the maximum value has been entered.

To modify the next item, press the NEXT key on the FS-2 front panel. It is only possible to have one username and password per unit. The maximum number of characters for each is seven.

VIEW IP INFO

In cases where DHCP is being used, by selecting VIEW IP INFO, you can see the IP address that the network has provided the FS-2.



If the FS-2 is not connected to a network or was not able to successfully log on, this screen displays "DHCP DISABLED NOT CONNECTED". Check your settings or contact your system administrator for further assistance.

SERVICES

The SERVICES menu allows you to select either FTP or TELNET for your network connection. With each, it is necessary to enable or disable the function within the sub menu.

REF VIDEO

The Reference video menu allows you to select where the reference video source will come from for recording and playback modes, Choices are:

- REF VIDEO - the reference video port on FS-2's rear panel,
- FREE RUN - reference video is generated on FS-2.
- SELECTED INPUT - reference video source comes from the selected input.

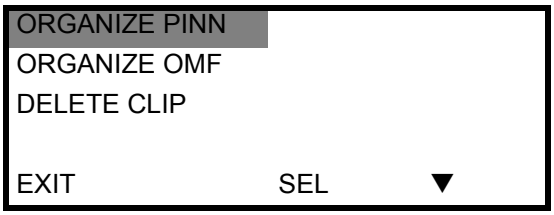
VIDEO ADJUST

The video adjust menu's allow you to make adjustments to FS-2 analog input sources. Adjustments include:

- HUE - adjustable between -179 and +180
- SATURATION- adjustable between -255 and +256
- BRIGHTNESS- adjustable between -127 and +128
- CONTRAST- adjustable between -127 and +128

Utilities

This menu allows you to access various UTILITIES functions.



- Select the Menu Item. Press SEL to open the sub menu (where applicable).
- Press EXIT to return to the menu screen.

This menu contains the following selections:

- ORGANIZE PINN
- ORGANIZE CLIP
- ORGANIZE OMF
- DELETE CLIP
- FORMAT
- PARTITION
- REPAIR
- FILE NAME
- FACTORY RESET

ORGANIZE PINN

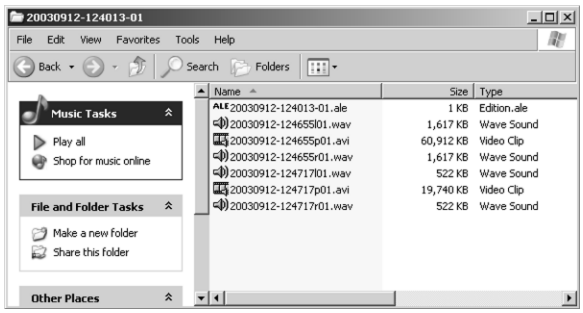
Once you have finished a Pinnacle recording session, do the following:

STEP 1: From the FireStore SETUP MENU, select ORGANIZE PINN.

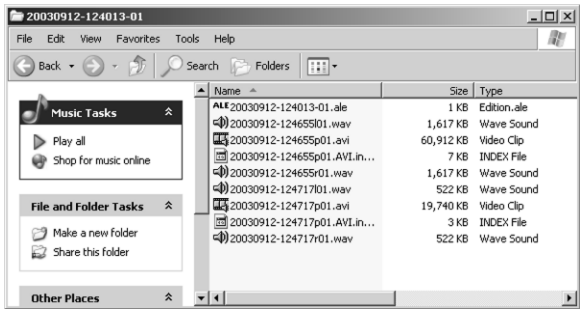
STEP 2: When prompted "ORGANIZE PINNACLE CLIPS? Select YES.

STEP 3: You can now remove the disk drive from FireStore to begin editing.

Products such as the Pinnacle AVI file format were created for use with products such as Pinnacle Liquid Edition. The Pinnacle AVI file format creates three files simultaneously during a recording; an AVI video file and two separate WAV audio files labeled as left and right. An additional “Edition.ale” file per recording session is also created which contains timecode data. This file must be kept with the media. This is shown in the following illustration.



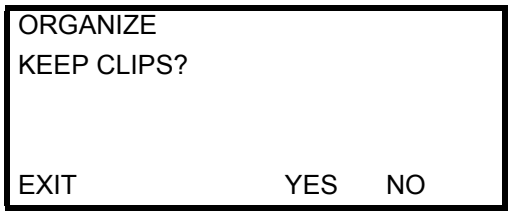
Once clips have been imported into Liquid Edition, an Index file is created on the disk drive per clip. Do not delete this file since it is required to continue work in the particular project. The illustration below shows this.



ORGANIZE CLIP

This selection places all files that were identified as a KEEPER or were SCENE MARKED during recording into a folder marked KEEPER or the prenamed SCENE MARKING folders on the disk drive. These folders can be imported directly into most DV NLE bins.

When you make this selection, the following screen appears:

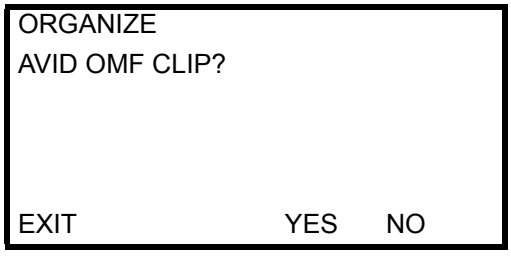


ORGANIZE OMF

When files are recorded in the AVID OMF file format, this command automatically takes all the OMF and AIF audio files at the end of a recording session and places them into a folder on the disk drive named “OMFI MediaFiles”. When the disk is connected to a computer, this folder is recognized by Avid’s Media Tool feature enabling direct import of files into the Avid timeline.

NOTE: If you have selected files as a KEEPER or they have been SCENE MARKED, you cannot use this feature and keep files in their selected folders. If you would like to use clips in KEEPER or SCENE MARKED folders in Avid, manually create the “OMFI MediaFiles” folder when your disk drive is on your computer and drag the desired clips into this folder.

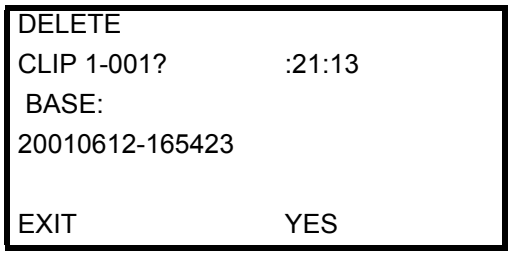
When you make this selection, the following screen appears:



For more information on using FS-2 clips in Avid, refer to “Using FireStore FS-2 Recorded Avid Clips on Avid Editing Systems” on page 3-4.

DELETE CLIP

When you make this selection, the following screen appears:



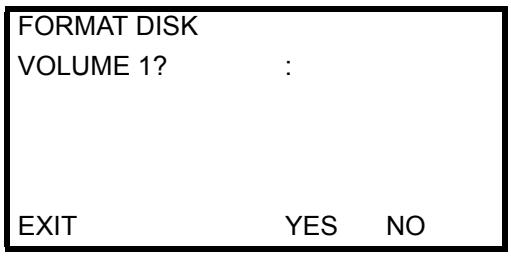
- In the DELETE CLIP X-XXX screen, select between clips by pressing the ▶▶ and ◀◀ buttons.
- If you select YES, a message appears indicating that the selected clip is being deleted.
- Press EXIT to return to the menu screen.

Once a clip has been deleted, the FS-2 display re-organizes the clip number sequence. For instance, if there are three clips on disk (1-001, 1-002, 1-003) and you delete clip 1-002, after delete is complete, clip 1-003 becomes clip 1-002. Base file names are not affected however.

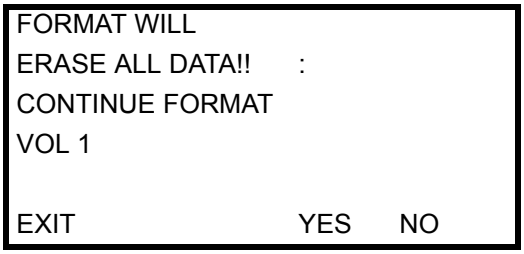
NOTE: It is generally not recommended to delete too many clips (greater than 30), since in a drive without formatting fragmentation may occur.

FORMAT DISK

When you make this selection, the following screen appears:



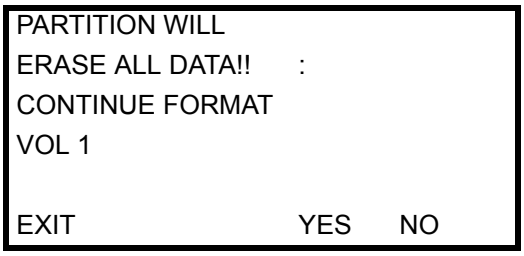
- Select between volumes by pressing the ▶▶ and ◀◀ buttons.
- When you select the volume and press YES, the following screen appears:



- When you select YES, a message indicating the formatting appears.
- Press EXIT to return to the menu screen.

PARTITION

When you make this selection, select the connected disk drive you wish to partition. Then, the following screen appears:



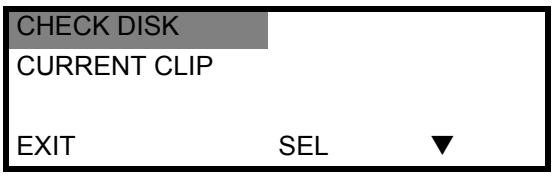
When an unknown volume type (HDD) is connected to the FS-2, the Partition process puts a FAT32 format onto the drive. It will erase any previous partition and data.

Select YES and a progress message appears on the screen.

NOTE: You cannot add multiple partitions an a single drive using the FS-2.

REPAIR

When you make this selection, the following screen appears:



- Select the desired function.
- Press SEL to open the sub-menu.
- Press EXIT to return to the menu screen.

CHECK DISK

This selection scans the entire volume for any errors (usually, if a file was corrupted during a recording, check disk will alert you of this).

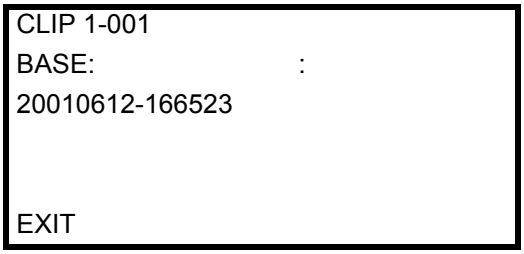
CURRENT CLIP

This selection performs a similar function, but on the selected clip only. If an error is found, the FS-2 prompts you to repair the problem. CURRENT CLIP will repair the last file in the current session if it has been damaged.

Select between volumes by pressing the ▶▶ and ◀◀ buttons. Press EXIT to return to the menu screen.

FILE NAME

When you make this selection, the following screen appears:



This selection displays the base file name of the selected clip.

FACTORY RESET

When you select this function, the FS-2 reverts all settings and values back to its factory default state.

- Press YES to start factory reset.
- Press EXIT or NO to exit from the menu.

Warning: Factory Reset is not un-doable!!!

The factory reset values are as follows:

Display:

- COUNTER

Rec Mode:

- DEFAULT REC MODE: NORMAL
- RETRO DISK – RETRO VALUE -> 000min
- RETRO CACHE – CACHE ->00 sec
- TIME LAPSE –> 00:00:00:00

Play Mode:

- DEFAULT PLAY MODE: PLAY CLIP

Play From:

- DEFAULT PLAY FROM MODE: TRACK LIST

Control Mode:

- DEFAULT CONTROL MODE: LOCAL

Rec Format:

- DEFAULT REC FORMAT: AVI TYPE 2

Setup:

- SET DATE&TIME:
  - DATE: 07/24/03
  - TIME: 12:00:00
- OS VERSION NO. -> VARIABLE
- PAL/NTSC ->VARIABLE
- RS422 REMOTE ->
  - TYPE ->BVW-75
  - TC SOURCE->DV
- AUDIO INPUT
  - COMPOSITE -> BALANCED ANALOG
  - Y/C -> BALANCED ANALOG
  - COMPONENT -> BALANCED ANALOG
  - SDI -> EMBEDDED
  - DV -> EMBEDDED
- AUDIO LAVELS -> 0.0Db
- ANALOG OUT -> COMPOSITE
- NETWORK SETTINGS
  - IP -> 000.000.000.000
  - SUBNETMASK -> 255.255.255.000
  - GATEWAY -> 000.000.000.000
- USER/PASSWORD -> FS2/FOCUS

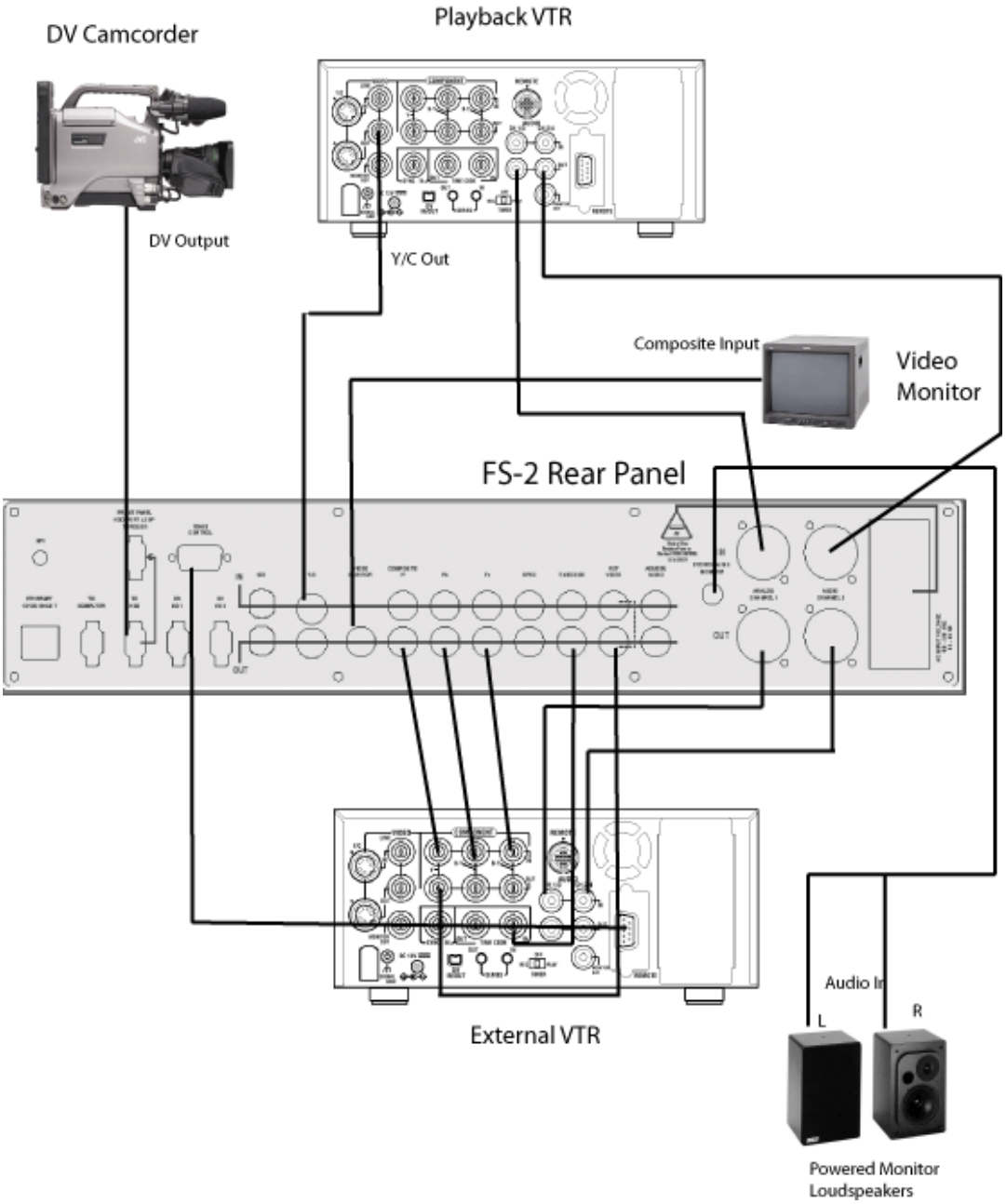
- REF VIDEO -> REF VIDEO
- VIDEO ADJUST
  - HUE -> +0
  - SATURATION -> +0
  - BRIGHTNESS -> +0
  - CONTRAST -> +0
- TC MODE -> EXT TC
- TC SET:
  - TC PRESET -> 00:00:00:00
  - UB PRESET -> 00 00 00 00
- DROP/NON-DROP -> NON-DROP
- OSD -> OFF
- FF/RW HI-RES -> DISABLED
- GPI -> DISABLE
- BACKLIGHT -> ON
- STOP OUTPUT -> NO OUTPUT
- CLIP PREVIEW -> PREVIEW ON
- AUDIO CORRECTION -> MEDIUM
- FOLDER PREF -> SCENE MARK

CHAPTER 3
USING THE FS-2

This chapter contains the following procedures:

- How to Make a Recording
- How to Playback
- How to Put Recorded Clips on a Computer System
- Creating a Play List
- How to Mark Scenes
- How to Connect the FS-2 to a Computer Network

To perform these procedures use input and output sources as illustrated in the following diagram.



How to Make a Recording

Use the following procedure to make a recording using the FS-2.

STEP 1: Make sure the FS-2 is connected to power and has been turned on using the power switch on the rear of the chassis.

STEP 2: Connect the required devices as explained in Chapter One. For this example, that would include a video source (audio and video), speakers or headset if desired, and a monitor if desired.

STEP 3: Make sure the drive in the FS-2 has been formatted. If it is not, the LCD screen indicates that it has not been. Refer to the Utilities Menu in Chapter 2.

STEP 4: Manually select the input source using the front panel buttons (that is, CMPST, Y/C, CMPNT, SDI, or DV).

STEP 5: Select the record format as follows:

a. Press the Menu soft key.

b. Select RECORD FORMAT

c. Select the desired format. Once selected, it is highlighted.

d. Press the Exit button twice.

STEP 6: Press the red record button twice. (Pressing this button once, acts as a pause function, pressing it again activates the record function.) Timecode on the front panel LCD will advance when recording begins.

STEP 7: Press STOP when you have finished the recording.

How to Playback

Use the following procedure to play back a recording using the FS-2.

NOTE: In all cases, if a monitor is connected, it displays the signal going through the FS-2

This procedure assumes that you have already recorded material on the hard drive as explained in the previous section.

STEP 1: Select the desired clip by using the Forward Index and Back Index buttons. These buttons step you through the clips on the selected disk drive.

STEP 2: If more than one disk drive is connected, press the SHIFT key as required until the desired drive appears on the LCD.

STEP 3: Press the PLAY button once to begin playback.

STEP 4: Press the Stop button once to pause or twice to stop the playback.

How to Put Recorded Clips on a Computer System

Once you have recorded clips to a FireWire disk drive using FireStore, you can use those clips in most computer based DV NLE systems.

Traditionally, in order to get footage into an NLE system, it was necessary to capture or digitize that footage utilizing a video capture card. Using the FS-2 recorded clips, you can skip this capture stage by just connecting a FireWire disk drive to your computer using an OHCI compliant IEEE-1394 (FireWire) PCI card or connection of use the HDD Bypass mode (refer to page 2-15 for more information).

FireWire disk drives used with the FS-2 can be connected to any computer system that will read a FAT 32 volume. This includes Windows 98SE, Windows ME, Windows 2000, Windows XP and Mac OS9 and OS10. FAT32 volumes will not work with Windows NT and older Macintosh based operating systems.

Check the FOCUS Enhancements' website (www.FOCUSinfo.com) for more information.

In order to use the FS-2 recorded FireWire disk drives on a computer, you must have an active IEEE-1394 connection on your computer. You also must have loaded any required FireWire disk drive drivers onto your computer system (Consult your FireWire disk drive documentation for more information).

Connect your FireWire disk drive to your computer system utilizing a standard 6-pin to 6-pin FireWire cable and connect power to the drive if necessary (some FireWire disk drives receive power from the computer's FireWire connection.

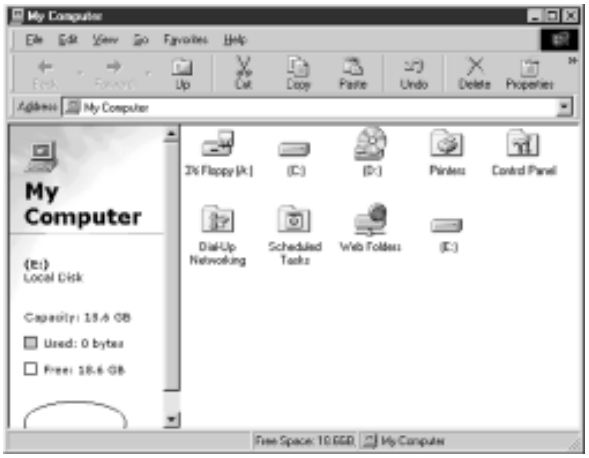
Consult your FireWire disk drive documentation for more information).

This section contains the following subsections:

- Mounting FireWire Disk Drives to Computer Systems (Windows XP, 2000, 98SE and ME)
- Using FireStore FS-2 Recorded Avid OMF Clips on Avid Editing Systems
- Dismounting FireWire Disk Drives from Computer Systems (Windows XP, 2000, 98SE and ME)
- Mounting FireWire Disk Drives to Computer Systems (Macintosh)
- Dismounting FireWire Disk Drives from Computer Systems (Macintosh)

Mounting FireWire Disk Drives to Computer Systems (Windows XP, 2000, 98SE and ME)

STEP 1: On a Windows based computer system, double click the My Computer icon on the top left hand corner of the desktop. You will see the following window:



STEP 2: Locate your FireWire disk drive. This will probably be labeled E:, F:, G:, and so on. (drive C: is usually your computer's main disk drive). Once you have identified it, double click on the FireWire disk drive.

If you have trouble locating the FireWire disk drive, right mouse click each drive and select Properties from the menu. Click the Hardware tab which lists the drive type). Once opened, you should see the following window:

The FireWire disk drive contains several different files. Clips can appear as

- RawDV (.dv)
- AVI Type 1 (YYYYMMDDHHMMSSa01)
- AVI Type 2 or 24p AVI Type 2 (YYYYMMDDHHMMSSb01)
- Canopus AVI (YYYYMMDD-HHMMSSb01)
- Matrox AVI (YYYYMMDD-HHMMSSm01 with a separate .wav audio file per track)
- Pinnacle AVI (YYYYMMDD-HHMMSSp01 with two separate .wav audio files per track)
- QuickTime or 24p Quicktime (.mov)
- Avid OMF (.omf with two separate .aif audio files per track).
- MXF (.mxf)

The FAT32 file system has a limitation where any particular file cannot exceed 2GB in size. This equates to roughly 9 minutes of recording time.

When clips are being recorded to FireStore that exceed 9 minutes in length, FireStore automatically creates a new file without dropping any frames.

The two clips will have the same primary file name, however, the last two digits will be different.

The first 2GB part of the clip will be labeled with “-01” after the primary file name.

The second 2GB segment will be labeled with a “-02”. Additional 2GB segments will be labeled with a “-0X” number.

With most NLE systems on a Windows computer, it is possible to utilize clips within the timeline by selecting the clips on the source volume (in this case, the connected FireWire disk drive) and importing them directly into the NLE’s bin.

Clips can then be immediately used in the NLE’s timeline.

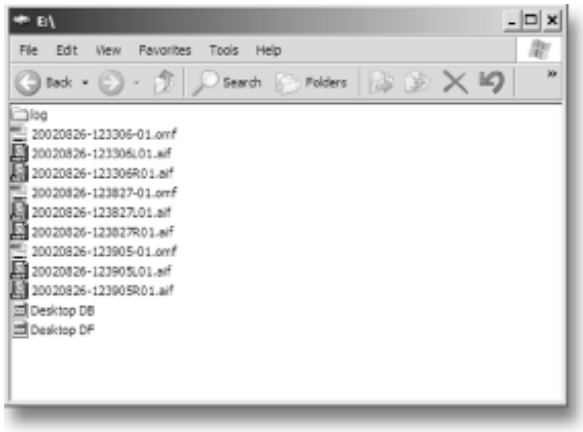
With FireWire disk drives such as the FireStore FSHDD-1, the drive itself is fast enough to directly stream the clips to the NLE eliminating the need to copy or transfer the clips before use.

When utilizing the Avid OMF file format, you must follow the following steps to import clips.

Using FireStore FS-2 Recorded Avid OMF Clips on Avid Editing Systems

The Avid DV OMF file format was developed for use with Avid editing systems on Windows 2000, Windows XP or Mac 0S10. These include Avid Xpress Pro, NewsCutter, Media Composer Adrenaline, and Symphony (with the DV option).

The Avid DV OMF file format creates three files simultaneously; an OMF video file and two separate AIF audio files. On the computer's desktop, the files appear as shown below.



On the FS-2, the video file (OMF) and the audio files (AIF) appear as one track.

If you delete an Avid DV OMF file, the FS-2 deletes the audio and video portions at the same time.

In order to use the FS-2 recorded Avid DV OMF files on your Avid NLE system from the external FireWire drive, use the following procedure.

STEP 1: Locate the external FireWire drive on your computer.

If you have trouble, you can locate the name of the external drive by selecting My Computer on a Windows system. On a Mac, the FireWire drive should appear on the desktop.

STEP 2: Open the FireWire drive when you have found it and create a new folder named “OMFI MediaFiles”.

To do this on Windows, select **File> New>Folder** from the pull down menu.

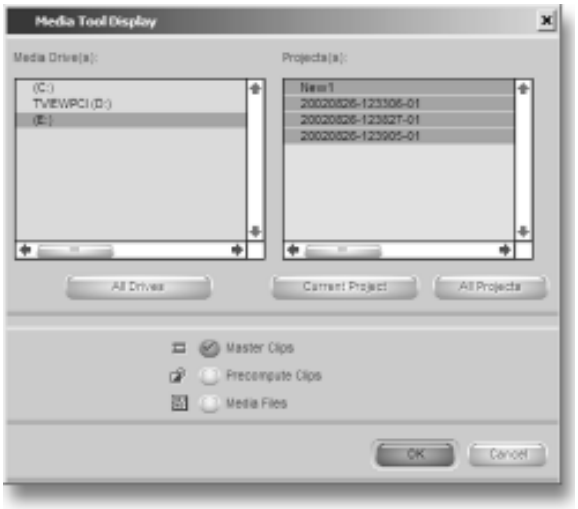
On Mac, select **File>New Folder.** You must type “OMFI MediaFiles” correctly in order for Avid to see the disk drive.

STEP 3: Drag all the OMF and AIF files into the new folder (do not drag in the files titled Desktop DB or Desktop DF).

NOTE: if you are using the ORGANIZE OMF function on FS-2 prior to using the disk on a computer, step 2 and 3 are not necessary.

STEP 4: Launch Avid. Once you have opened the desired project or created a new project.

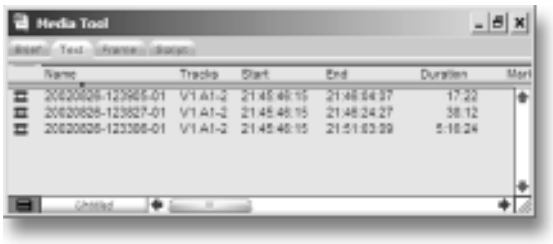
STEP 5: Select **Tools>MediaTool.** The following window will appear:



STEP 6: Locate and select the external FireWire drive under Media Drive(s).

NOTE: If the drive does not appear, check to make sure you have created the OMFI MediaFiles folder correctly with proper case and spacing. Also, check to see that the drive is properly connected and recognized by the computer). Under Project(s), select All Projects (This highlights all items in the Project(s) window).

STEP 7: Ensure Master Clips is checked then press **OK**. The following Media Tools Window will appear:



STEP 8: Create a new bin (select File -> New Bin) or open an existing bin in Avid.

STEP 9: Once opened, select all items in the Media Tools window (select **Edit> Select All**).

STEP 10: Drag the contents of the Media Tools Window into the bin. It is now possible to use these clips in the Avid timeline.

Dismounting FireWire Disk Drives from Computer Systems (Windows XP, 2000, 98SE and ME)

Once you have completed working with your disk drive on a Windows XP, Windows 2000, Windows 98SE or Windows ME computer system, you must dismount the drive before unplugging it.

To do this, use the following procedure:

STEP 1: Click the Stop Device icon at the bottom right side of the Windows task bar as shown below.

STEP 2: Once clicked, your computer system prompts you to “STOP” the connected FireWire disk drive. This begins the dismount process.

STEP 3: Select the message by clicking on it. The computer will now dismount the disk drive and notify you when it is safe to remove the volume.

Mounting FireWire Disk Drives to Computer Systems (Macintosh)

Note: Even if your FireWire disk drive was bought for use on a Macintosh, you MUST first partition and format the drive as a FAT32 volume on the FS-2 for it to work.

STEP 1: On a Macintosh, start your computer and connect your FireWire disk drive to the computer utilizing a standard 6-pin to 6-pin FireWire cable.

Consult your FireWire disk drive documentation for more information.

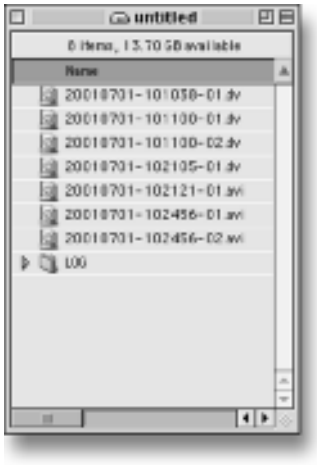
STEP 2: Ensure the required FireWire disk drive drivers have also been loaded onto you computer system (consult your

FireWire disk drive's documentation for more information).

When mounted, your FireWire disk drive should appear on the computer's desktop as shown below:

The FireStore formatted disk drive appears as a FAT32 volume with a PC label. This is not always the case on Version 10 of the Macintosh operating system however.

STEP 3: Once you have located your FireWire disk drive on the desktop, double click the disk icon to open it up. Once opened, you will see the following:



Dismounting FireWire Disk Drives from Computer Systems (Macintosh)

Once you have completed working with your disk drive on a Macintosh computer system, you must first dismount the drive before unplugging it.

Do this as follows:

STEP 1: Select the disk drive on the computer's desktop. It is marked with a PC symbol.

STEP 2: Once selected, drag the drive into the trash. This will then dismount the particular disk drive.

Creating a Play List

Use the following procedure to create a simple playlist on the FS-2.

STEP 1: Ensure no playlist is open.

STEP 2: TO ADD A CLIP - Play a clip you wish to add to the playlist. Using the front panel buttons, press MARK IN and MARK OUT for the particular portion of the clip to add to the playlist. Both buttons will light.

STEP 3: Once marked, press the front panel PLAYLIST button. The MARK IN and MARK OUT key lights will go out.

STEP 4: Navigate to the next clip and again mark in and out points followed by pressing PLAYLIST.

STEP 5: Repeat steps 2 and 3 to add all desired clips.

STEP 6: Once you have selected all the clips you wish to add to the playlist, stop playback and navigate to the PLAYLIST menu on FS-2.

STEP 7: Select SAVE and name the playlist. (It is also possible to modify your created playlist at this stage using the PLAYLIST-> EDIT menu.

STEP 8: To playback the playlist, navigate to PLAY-FROM in the FS-2 menu and select PLAYLISTS. Select the desired playlist and then exit. The PLAYLIST button on the front panel will light.

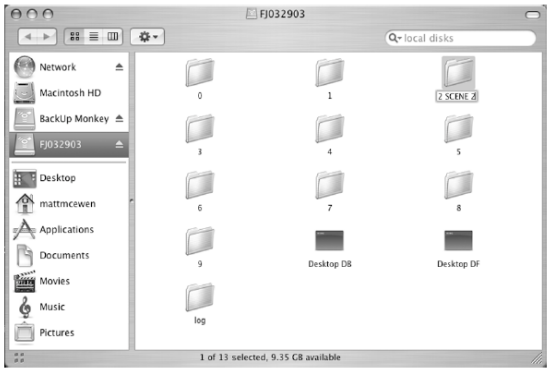
All playback will now come only from the created playlist.

How to Mark Scenes

The FS-2 Scene Marking feature allows clips to be marked for placement in particular folders during recording, playback or stop mode.

When a drive is formatted using FireStore, ten folders are created numbered 0 through 9. After format on FireStore, you can connect the HDD to a computer and give each of these folders a custom name (if you need help mounting your FireWire HDD to your computer system, refer to “How to Put Recorded Clips on a Computer System” on Page 3-2. To rename each folder, click on the folder name until it is highlighted, then type in the desired name of the folder.

NOTE: Folder names cannot exceed eleven characters.



Folders are ordered on FireStore in numerical followed by alphabetical order. For instance, if folders are named “Scene 1”, “Scene 2” and “Auditions”, they appear on FireStore as “1 Auditions”, “2 Scene 1” and 2 Scene 2”. The folder number is added in front of the folder name on the FS-2 LCD display for easy identification when using the optional remote control commander keypads.

To create a custom order to Folders, it is recommended that you change the name to change the numerical/alphabetical order.

To use SCENE MARKING, locate a clip you wish to mark and then during playback, record, or stop, press the SHIFT + Folder keys. Continually press the keys to cycle through to the desired folder. Each SCENE MARK FOLDER is shown on the FS-2 LCD display.

■ STOP		1-1001
COUNTER		
00:00:00:00		
DISK 1		184 min
<2SCENE 2>		
MENU	DISP	SHFT

If the FS-2 PLAY MENU is set to “TRACKLIST” the name of the SCENE MARKED folder will appear without brackets on the LCD display (for example, 2 SCENE 2). If the PLAY FROM menu is set to “FOLDERS”, the name of the SCENE MARKED folder appears in brackets on the LCD display (for example, 2 <SCENE 2>.

You can also SCENE MARK clips to folders using the numeric keypad on the optional remote control unit. To add all SCENE MARKED clips to their respective folders on the disk drive, select UTILITIES>ORGANIZE CLIP from the FS-2 menu.

Once complete, an additional file is added to the disk named “grade” and files are moved to the selected folder for easy access on an NLE system.

Do not delete the file named “grade” from the disk if you intend to use the disk on FireStore again.

How to Connect the FS-2 to a Computer Network

You can connect the FS-2 to a network using the 10/100 Base T Ethernet port on the rear panel. Do this as follows:

STEP 1: Use a standard RJ85 cable to connect between the Ethernet port on the rear panel to a network.

STEP 2: Power up the FS-2 and make sure your network is functioning properly. Contact your system administrator for additional help.

STEP 3: Navigate to the FS-2 NETWORK SETTINGS menu (**MENU> SETTINGS>NETWORK SETTINGS**). Once in the menu, open the IP SETTINGS sub menu.

STEP 4: Select either DHCP (network supplies the IP address) or CUSTOM IP (you enter the IP address, Sub Net Mask

and Gateway). Exit once complete.

STEP 5: If your network requires a user name or password, navigate to USER/ PASSWORD and enter both.

STEP 6: Make ruse FTP is enabled. Navigate to **MENU -> SETTINGS -> NETWORK SETTINGS -> FTP**.

STEP 7: Exit the NETWORK SETTINGS menu and the FS-2 attempts to log onto the network.

CHAPTER 4
SPECIFICATIONS

This chapter contains detailed technical specifications for the FS-2 as follows:

- Technical Specifications
- FS- 2 LCD Display Modes

Technical Specifications

Input/Outputs

Component - Y, Pr, Pb (3 x BNC in, 3 x BNC out)

if Component SMPTE:

- 100% white at 700mv with 300mv Sync
- 700mv Chroma levels
- Setup default to OFF
- Chroma offset default to OFF (override allowed on defaults)

If Component Betacam

- 100% white is at 714mv with 286mv Sync
- 4/3 Chroma boost to 934mv p to p
- 350mv Chroma offset default to ON
- Setup default to ON

If Component MII:

- 100% white is at 700mv with 300mv Sync
- Black to White range is restricted to 647mv (700-setup)
- 350mv Chroma offset is ON
- Setup is ON

Sync (1 x BNC in, 1 x BNC out)

Composite (1 x BNC in, 1 x BNC out)

Monitor Video Out - Composite (1 x BNC)

General Composite Specifications

Differential Phase	1 Degree maximum
Differential Gain	1% maximum
Hue Accuracy	1 Degree
Signal/Noise Ratio	54 dB
Bandwidth	5.5 MHz
K Factor % @ 2T	.5 % maximum
Y/C Delay	25 nS
Subcarrier locking range	100Hz
Subcarrier free-run frequency	+/- 30 Hz (NTSC or PAL Fsc deviation
Genlock Horizontal adjustment range	100 uS
Genlock Color adjustment Range	360 Degrees
Residual Subcarrier	.5 IRE
SCH Phase	2 Degrees
Subcarrier free-run frequency	+/- 20 Hz

S-Video - Y/C (1 x 4-pin DIN in, 1 x 4-pin DIN out)

Levels Adjustments

Video Gain	- +/- 20% 2mv resolution
Chroma Gain	- +/- 20% 2mv resolution
Setup	ON adds 7.5 IRE, or 53mv to luminance channel
	OFF no change to luminance channel
Chroma Offset	ON adds 350mv to U and V
	OFF no Chroma Offset

Serial Digital - SD-SDI (1 x BNC in, 1 x BNC out) - conforms to the SMPTE 259M standard

Timecode (1 x BNC in, 1 x BNC out)

Balanced Audio (2 x XLR in, 2 x XLR out) Stereo Audio Monitor (1 x 1/4" TRS jack)

General Audio Specifications

Balanced Inputs

Input Impedance	600 Ohms +/-10 Ohms
Quantization	16 bits 32/48Khz
Output Level into 600 Ohms at unity	+/- 1 dBm with 24 dBm input

Common mode rejection @1 KHz (dB)100 dB

Analog Input adjustment range -34dB to +12dB (in 1.5dB steps, default setting 0dB)

Amplitude with no clipping	25 dBM. 2V
Balanced Outputs	
THD	1%
Channel Separation	20hz to 20Khz 70 dB
SNR	90 db
Quantization	16 bits 32/48Khz
Output Impedance	600 Ohms +/-10 Ohms
Bandwidth at -3dB points	100Khz

Headphone Output (1 x 1/4" TRS jack w/ level control)

Headphone adjustment range -73dBdB to +6dB

Headphone Output Impedance32 Ohms, 32mW

AES/EBU Digital Audio (1 x XLR in, 1 x XLR out)

Reference Video Loop Through (2 x BNC)

DV Video I/O - 25 Mb/s (1 x 6-pin IEEE-1394)

DV Video Pass Through - up to 400 Mb/s (1 x 6-pin IEEE-1394)

External HDD I/O - up to 400 Mb/s (1 x 6-pin IEEE-1394)

FireWire Computer I/F (1 x 6-pin IEEE-1394)

10/100 Base T Ethernet

Control

- GPI & RS-232C Control (1 x 3.5mm mini jack)
- RS-422 (1 x DB9 Serial)

Power

- 110V to 220V AC, 50 - 60 Hz, Auto Ranging 100W
- IEC Power Input

Physical Specification

- 18.41lbs (8.36kg)
- 19" x 17.3" x 3.5" (483mm x 440mm x 89mm)

Audio/Video/Timecode Specification

- 25Mb/s, 8-bit 4:1:1 (NTSC-DV) or 4:2:0 (PAL-DV) video (user switchable)
- SMPTE or DV embedded or External Timecode (Drop or Non Drop)
- 2-ch., 16-bit or 4-ch., 12-bit embedded Digital Audio

DTE File Formats

RawDV (.dv), AVI Type 1, AVI Type 2, Canopus AVI and Matrox AVI (.avi), QuickTime (.mov), Pinnacle (.avi) or Avid DV-OMF (.omf)

Disk Information

- Internal Disk Type: 120 GB, IDE, 7200 RPM
- External Disk Type: User Supplied IEEE-1394a FireWire
- Disk Format: FAT32
- FAT32 FireWire HDD compatible with Windows 98SE, ME, 2000, XP and Mac OS9 and OSX Compliance and Warranty
- CE, C-Tick and FCC
- 2-Year Limited Warranty

Compatible DV Formats

DV, MiniDV, DVCam and DVCPro

FS- 2 LCD Display Modes

The table below shows LCD characteristics when used with different FS-2 control, record, play and stop modes:

PLAY/REC MODE	FS-2 LCD
Stop	STOP
Pause	II PLAY
Play	> PLAY
Rec (Pause)	II REC
Normal Rec (Rec)	REC
Retro Disk (Stop)	L STOP
Retro Disk (Standby)	L REC
Retro Cache (Stop)	C STOP
Retro Cache (Standby)	C REC
Loop Record (Stop)	O STOP
Loop Record (Standby)	O REC
Loop Record (Rec)	O REC
Snap (Stop)	STOP
Snap (Standby)	II SNAP
Snap (Rec)	II SNAP
Time Lapse (Stop)	STOP
Time Lapse (Pause)	II T REC
Time Lapse (Rec)	T REC

CONTROLTYPE	FS-2 LCD
AV/C* (Stop)	A STOP
AV/C* (Rec Pause)	II A <REC TYPE> REC
AV/C* (Rec) A	<REC TYPE> REC
AV/C* (Play Pause)	II A PLAY
AV/C* (Play)	A ALL
Syncro Slave (Pause)	II Y <REC TYPE>REC
Syncro Slave (Rec)	Y <REC TYPE>REC

* AV/C is only for use when the FS-2 is connected to a computer system. To control the FS-2 from a camcorder, use Synchro Slave Mode.